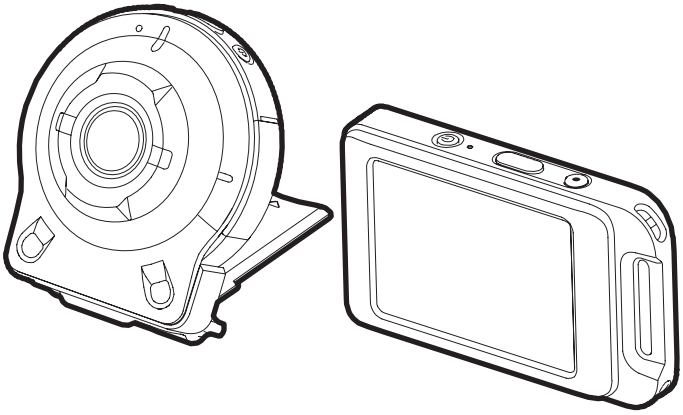
CASIO

EN

Digital Camera

EX-FR10

User's Guide



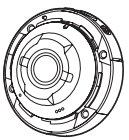
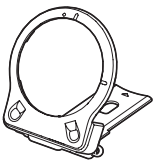
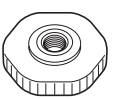
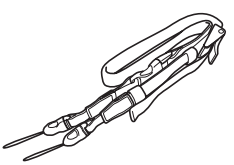
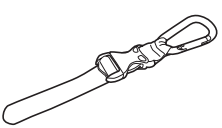
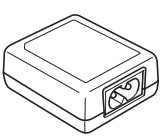
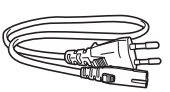
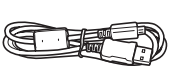
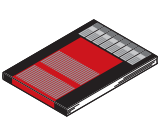
Thank you for purchasing this CASIO product.

- Before using it, be sure to read the precautions contained in this User's Guide.
- Keep the User's Guide in a safe place for future reference.
- For the most up-to-date information about this product, visit the official EXILIM Website at http://www.exilim.com/

EXILIM

Accessories

As you unpack your camera, check to make sure that all accessories shown below are included. If anything is missing, contact your original retailer.

 Camera (EX-FR10)	 Controller (EX-FR10CT)	 Hinge Unit • The hinge unit comes pre-attached to the camera.
 Lens hood	 Tripod nut	 Neck strap
 Carabiner strap	 USB-AC adaptor (AD-C53U)	 Power cord*
 Micro USB cable	 Basic Reference	

* The shape of the power cord plug varies according to the country or geographic area where the camera is sold.

Read this first!

- The contents of this manual are subject to change without notice.
- The contents of this manual have been checked at each step of the production process. Feel free to contact us if you notice anything that is questionable, erroneous, etc.
- Any copying of the contents of this User's Guide, either in part or its entirety, is forbidden. Except for your own personal use, any other use of the contents of this manual without the permission of CASIO COMPUTER CO., LTD. is forbidden under copyright laws.
- CASIO COMPUTER CO., LTD. shall not be held liable for any damages or lost profits suffered by you or any third party due to the use or malfunction of this product.
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- CASIO COMPUTER CO., LTD. shall not be held liable for any damages or lost profits caused by loss of memory contents due to malfunction, repair, or any other reason.
- Note that the example screens and product illustrations shown in this User's Guide may differ somewhat from the screens and configuration of the actual camera.

LCD Panel

The liquid crystal panel of the monitor screen uses high-precision technology that provides a pixel yield in excess of 99.99%. This means that some very small number of pixels may not light or may remain lit at all times. This is due to the characteristics of the liquid crystal panel, and does not indicate malfunction.

Take test shots

Before shooting your final image, shoot a test shot to ensure that the camera is recording correctly.

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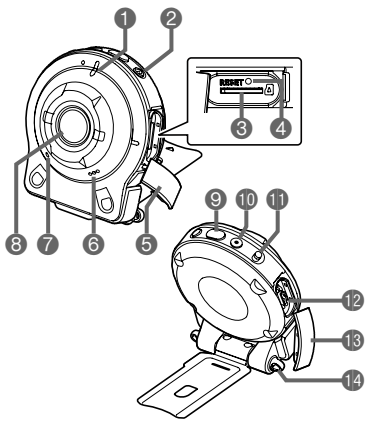
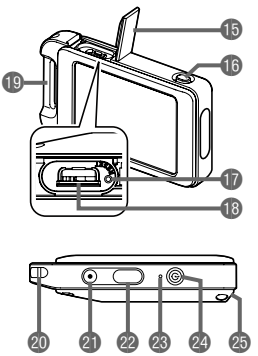
General Guide

The numbers in parentheses indicate the pages where each item is explained.

Camera



Controller



Camera

1. Operation lamp (pages 19, 22)
2. [⏻] (Power) (page 25)
3. Memory card slot (page 30)
4. [RESET] button (page 106)
5. [CARD] cover (page 30)
6. Speaker
7. Microphone (pages 16, 43)
8. Lens (page 16)
9. Shutter button (page 32)
10. [●] (Movie) (page 42)
11. [FREE] lever (page 13)
12. [USB] port (pages 18, 21, 74, 78)
13. [USB] cover (pages 18, 21)
14. Strap holes (page 15)

Controller

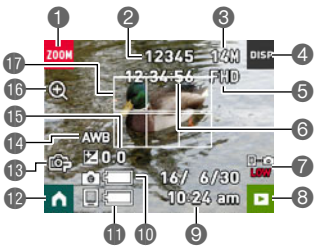
15. [USB] cover (pages 18, 21)
16. [RELEASE] button (page 12)
17. [RESET] button (page 106)
18. [USB] port (pages 18, 21)
19. Carabiner strap attachment bar (page 16)
20. Strap holes (page 15)
21. [●] (Movie) (page 42)
22. Shutter button (page 32)
23. Operation lamp (pages 19, 22)
24. [⏻] (Power) (page 25)
25. Hinge unit slot (page 12)

Monitor Screen Contents and How to Change Them

The monitor screen uses various indicators, icons, and values to keep you informed of the camera's status.

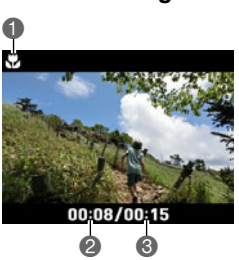
- The sample screens in this section are intended to show you the locations of all the indicators and figures that can appear on the monitor screen in various modes. They do not represent screens that actually appear on the camera.

■ Snapshot Recording



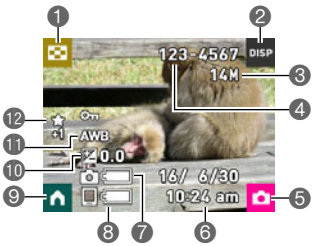
1. Zoom icon (page 41)
2. Snapshot capacity (number of shots) (page 112)
3. Snapshot image size (page 46)
4. Information icon (page 9)
5. Movie quality (page 42)
6. Movie capacity (recording time) (page 112)
7. Bluetooth communication status (page 26)
8. PLAY mode icon (pages 27, 51)
9. Date/Time (pages 27, 68)
10. Camera battery level indicator (page 24)
11. Controller battery level indicator (page 24)
12. Home icon (page 35)
13. Recording mode (page 39)
14. White balance (page 48)
15. Exposure compensation (page 47)
16. Digital zoom (page 41)
17. Focus frame

■ Movie Recording



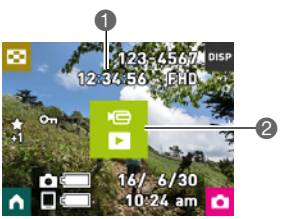
1. Close-range indicator (page 42)
2. Movie Recording time (page 42)
3. Time set with "Max Recording Time" (page 42)

■ Snapshot Viewing



1. Image menu icon (page 54)
2. Information icon (page 9)
3. Snapshot image size (page 46)
4. Folder name/file name (page 80)
5. REC mode icon (page 27)
6. Date/Time (pages 27, 68)
7. Camera battery level indicator (page 24)
8. Controller battery level indicator (page 24)
9. Home icon (page 50)
10. Exposure compensation (page 47)
11. White balance (page 48)
12. Highlight Score (page 58)

■ Movie Playback



1. Movie recording time (page 52)
2. "▶" Movie play icon (page 52)

■ Selecting Display Information (DISP)

Each touch of "DISP" will cycle through settings that display or hide on-screen information. You can configure separate settings for the REC mode and PLAY mode.

- Display information cannot be changed during movie recording.

Off	No information displayed.
Information On	Shows information about image settings, etc.
Status On	Shows more detailed information about settings.

Quick Start Basics

What you can do with your CASIO camera

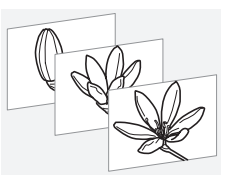
Your CASIO camera is packed with a powerful selection of features and functions to make recording of digital images easier, including the following main functions.

■ Shooting

A variety of shooting styles

The camera connects to the controller using Bluetooth® wireless technology (Bluetooth).
You can hang it from your neck, mount it on a tripod, and select the shooting style that suits current conditions. The camera can also be rotated 90 degrees, which means you can change the orientation of a snapshot with little repositioning the camera.

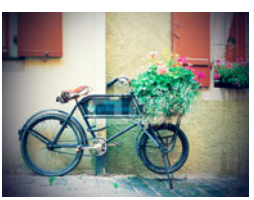
→See page **12** for more information.



Interval Snapshot

Shoot snapshots and/or movies at fixed intervals. It's a great way to chronicle a day's activities or changes over time.

→See page **36** for more information.



ART SHOT

A variety of artistic effects help to make even common, ordinary subjects become more novel and exciting.

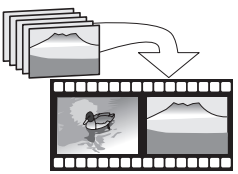
→See page **39** for more information.

■ Viewing

Highlight Photo

You can configure camera settings to automatically select snapshot highlights and generate a collage of them each day.

→See page **55** for more information.

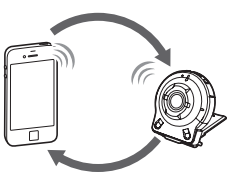


Highlight Movie

You can configure camera settings to automatically select snapshot and movie highlights, and create a movie of them each day.

→See page **56** for more information.

■ Sharing



Wireless LAN Connection

Turns your smartphone into a camera remote controller and allows you to select one or more snapshot and/or movie file in camera memory and send a copy to a smartphone.

→See page **60** for more information.

Using the Attachment

You can configure the camera to suit your specific needs by attaching the hinge unit, which enables attachment of the controller, and other included and optionally available attachments. This way you can configure the camera to suit your specific needs.

IMPORTANT!

- Do not apply strong pressure to the surface of the monitor screen. Doing so can damage it.
- Never touch the lens with your fingers. Finger smudges, dirt, and other foreign matter on the lens can interfere with proper operation of the camera. Use a blower or other means to keep the lens and flash window free of dirt and dust, and wipe gently with a soft, dry cloth.

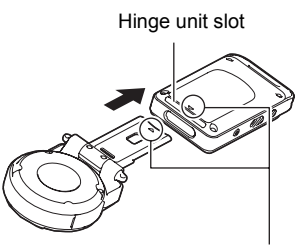
Controller

You can attach the controller to the camera and use the camera as a normal camera.

■ To attach the controller

1. **With the camera lens pointed in the same direction as the controller's monitor screen, slide the hinge unit into the controller's hinge unit slot.**

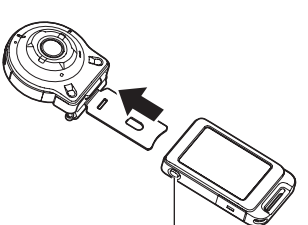
2. **Push the hinge unit in until you hear it click into place.**



Align the ▼ mark on the end of the hinge unit with the ▲ mark next to the hinge unit slot.

■ To detach the controller

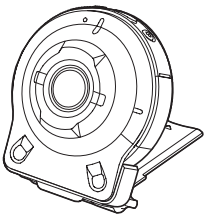
1. **While holding down the controller's [RELEASE] button, pull it out of the camera.**



[RELEASE] button

Hinge Unit

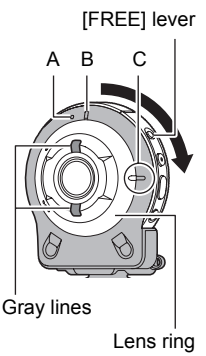
■ To use the hinge unit as a stand



■ To change the shooting direction by 90 degrees

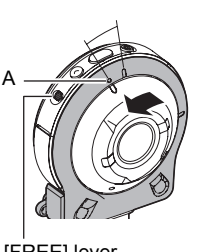
1. **While pulling down on the camera's [FREE] lever, rotate the camera clockwise 90 degrees until you hear a click.**

- Align the camera's operation lamp with the C mark on the hinge unit.
- The gray lines on the lens ring indicate the orientation of the long dimension of the image being shot.

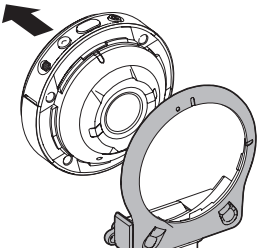


■ To remove the hinge unit from the camera

1. **While pulling down on the camera's [FREE] lever, rotate the camera counterclockwise about 15 degrees until its operation lamp is aligned with the A mark on the hinge unit.**



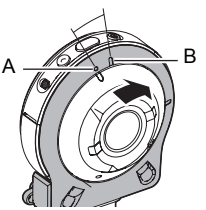
2. Remove the hinge unit from the camera.



■ **To attach the hinge unit to the camera**

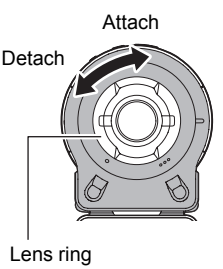
1. Align the camera's operation lamp with the A mark on the hinge unit.

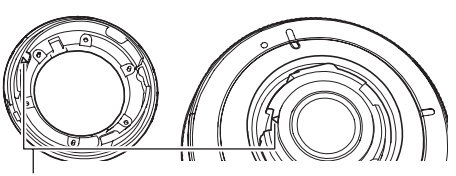
2. Rotate the camera clockwise about 15 degrees until its operation lamp is aligned with the B mark on the hinge unit.



Lens hood

If unwanted light is shining on the lens, rotate the lens ring counterclockwise to detach it, and then attach a lens hood.

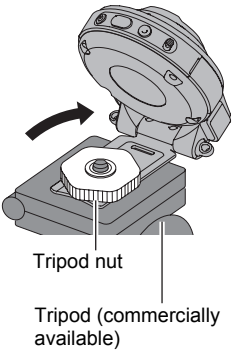




When attaching the lens hood or lens ring, align the ▲ mark on the camera with the ▼ mark on the lens hood or lens ring.

Tripod nut

1. **Use the tripod nut to secure a tripod (commercially available) to the hinge unit.**



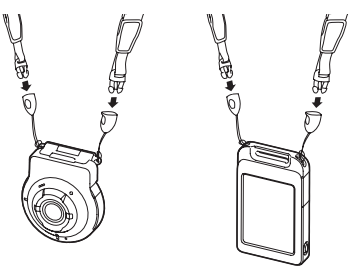
Strap

■ Neck Strap

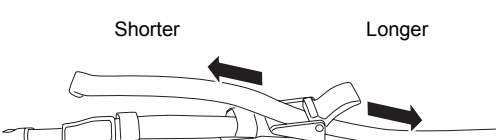
The neck strap can be attached to the camera or the controller.

1. **Remove the buckles from the strap and attach the strap to the two strap holes on the camera or controller.**

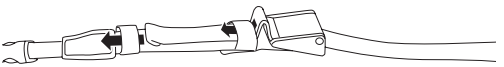
2. **Replace the buckles.**



3. **Use the adjusters to adjust the strap length and then fix the adjusters on place.**

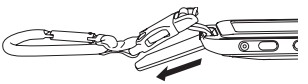


4. **Pass the ends of the strap through the bands.**



■ Carabiner Strap

1. **Pass the carabiner strap belt around the controller's carabiner strap attachment bar.**



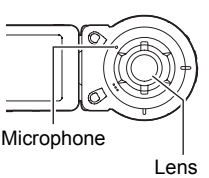
2. **Pass the belt through the buckle to secure it.**

IMPORTANT!

- The carabiner strap is not intended for mountain climbing use. It is designed only to support the camera.

NOTE

- When shooting hold the camera still. Carefully press the shutter button and take care to avoid all movement as the shutter releases and for a few moments after it releases.
- Take care that your fingers and the strap do not cover any of the areas indicated in the illustration.
- Never swing the camera around by its strap.
- The supplied strap is intended for use with this camera only. Never use it for any other purpose.

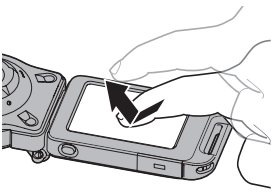


Using the Touch Panel

The monitor screen of the camera is a touch panel. This means you can perform the following operations by touching the screen with your fingers.

Touch

Momentarily touching the screen with your finger.
Touch the screen to select an icon or menu item, and to configure settings.

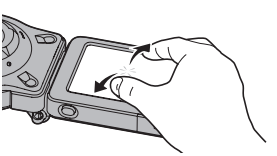


Flick

Holding your finger against the screen as you flick it up, down, left, or right.
Use flick to scroll forward through images.

Spread

Holding your thumb and forefinger against the screen as you spread them out.
Use spread to enlarge the screen image.



Squeeze

Holding your thumb and forefinger against the screen as you bring them together.
Use squeeze to reduce the size of the screen image, and to display multiple images.

IMPORTANT!

- Never use a pointed or hard object to perform screen operations. Doing so can damage the screen.

NOTE

- Applying a commercially available LCD protective sheet will reduce the operation sensitivity of the monitor screen.
- The camera will have a hard time interpreting a screen operation made using your fingernails. Use the fleshy pad of your finger.

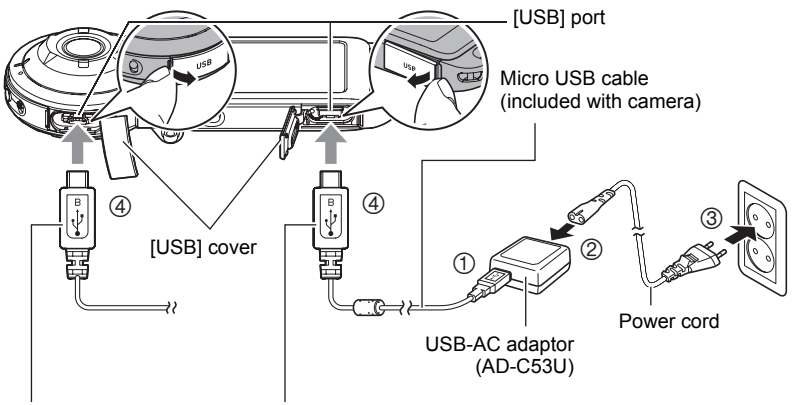
First, charge the battery prior to use.

The camera and the controller each have a built-in rechargeable lithium ion battery. The batteries are not charged when you purchase the camera, so you will need to charge both the camera and controller before using them.
You can use either of the two following methods to charge the batteries.

- USB-AC adaptor
- USB connection to a computer

■ To charge with the USB-AC adaptor

While the camera and controller are turned off, connect in the sequence shown below.
Charging time: Approximately 135 minutes



When plugging in the connectors, orient this marking as described below.
Camera : Towards the lens side
Controller: Towards the monitor screen side

- When disconnecting the USB-AC adaptor from the camera, be sure to disconnect from the camera first.

NOTE

- If you turn on the camera or controller while charging with the USB-AC adaptor, you will be able to perform normal recording operations. In this case, however, charging of the camera will be stopped while it is turned on.

■ Operation Lamp Indications

While power is off

Operation Lamp Status	Meaning
Lit red	Charging
Flashing red	Charging stopped due to abnormal ambient temperature, USB-AC adaptor problem, battery problem (page 99), timer operation.
Unlit	Charging complete

While power is on

• Camera

Operation Lamp Status	Meaning	
Lit green	Camera turned on	Charging stopped
Slow red-amber flashing	In sleep state	Charging
High speed red-green flashing		Charging stopped due to abnormal ambient temperature, USB-AC adaptor problem, battery problem (page 99), timer operation.
Slow green flashing		Charging complete

• Controller

Operation Lamp Status	Meaning
Lit red	Charging
Slow red-amber flashing	Charging (sleep state)
High-speed green-amber flashing	Charging stopped due to abnormal ambient temperature, USB-AC adaptor problem, battery problem (page 99), timer operation.
High-speed red-green flashing	Same as above (sleep state)
Lit green	Charging complete
Slow green flashing	Charging complete (sleep state)

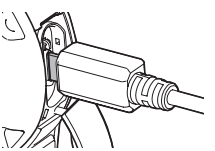
IMPORTANT!

- A battery that has not been used for a long time, or ambient temperature extremes can cause charging to take longer than normal. If charging takes longer than about five hours, a timer will terminate it automatically, even if the battery is not fully charged. This is indicated by the operation lamp flashing red.
- The USB-AC adaptor will become warm during charging. This is normal and does not indicate malfunction.
- The shape of the power plug depends on each country or geographic area.

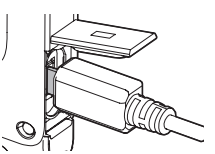
If the operation lamp is not lit or flashing during charging, check the orientation of the USB cable connectors.

- Make sure that you insert the cable connector into the USB port until you feel it click securely into place. Failure to insert the connector fully can result in poor communication or malfunction.
- Note that even while the connector is fully inserted, you still will be able to see the metal part of the connector as shown in the illustration.

Camera

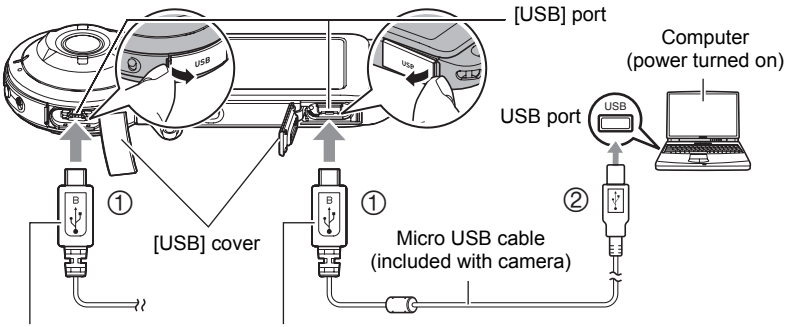


Controller



■ To charge using a USB connection to a computer

While the camera and controller are turned off, connect in the sequence shown below (①, ②).



When plugging in the connectors, orient this marking as described below.
Camera : Towards the lens side
Controller: Towards the monitor screen side

- If the camera or controller is on, hold down [⏻] (Power) to turn it off before connecting it to your computer.
  Charging time: Approximately 150 minutes

NOTE

- If you turn on the camera while charging over a USB connection to a computer is in progress, the camera will establish a USB connection with the computer. Charging will continue. Charging will also continue if you turn on the controller. Note that certain types of computers or connection environments may stop charging if supply power is low.

■ Operation Lamp Indications

While power is off

Operation Lamp Status	Meaning
Lit red	Charging
Flashing red	Charging stopped due to abnormal ambient temperature, USB-AC adaptor problem, battery problem (page 99), timer operation.
Unlit	Charging complete

While power is on

• Camera

Operation Lamp Status	Meaning
Lit amber	Charging
High speed red-green flashing	Charging stopped due to abnormal ambient temperature, USB-AC adaptor problem, battery problem (page 99), timer operation.
Lit green	Charging complete

• Controller

Operation Lamp Status	Meaning
Lit amber	Charging
Slow red-amber flashing	Charging (sleep state)
High-speed green-amber flashing	Charging stopped due to abnormal ambient temperature, USB-AC adaptor problem, battery problem (page 99), timer operation.
High-speed red-green flashing	Same as above (sleep state)
Lit green	Charging complete
Slow green flashing	Charging complete (sleep state)

IMPORTANT!

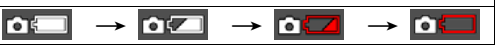
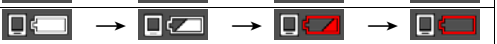
- The first time you connect the camera or controller to your computer with the USB cable, an error message may appear on your computer. If this happens, disconnect and then reconnect the USB cable.
- A battery that has not been used for a long time, certain types of computers, and connection conditions can cause charging to take more than approximately five hours, which will trigger a timer that terminates charging automatically, even if the battery is not fully charged. If this happens, disconnect and then reconnect the USB cable to restart charging. To complete charging faster, use of the included USB-AC adaptor is recommended.
- Charging is not performed while the connected computer is in the hibernate mode.

Other Charging Precautions

- With the two charging methods described above, you can charge the batteries. Never use any other type of charger device. Attempting to use a different charger can result in unexpected accident.
- This model can be charged only via from USB 2.0 specification USB port only.
- USB charging devices and power supply devices are subject to fixed standards. Use of an inferior device or a device that is not up to standard can cause malfunction and/or failure of your camera.
- Operation is not guaranteed in the case of a computer built or modified by you. Even in the case of a commercially available computer, certain USB port specifications may make it impossible to charge via the USB cable.
- A battery that is still warm immediately after normal use may not charge fully. Give the battery time to cool before charging it.
- A battery discharges slightly while it is loaded in the camera or controller. Because of this, it is recommended that you charge the battery immediately before you need to use it.
- Charging the battery may cause interference with TV and radio reception. If this happens, plug the USB-AC adaptor into an outlet that is further away from the TV or radio.
- Actual charging time depends on current battery capacity and charging conditions.
- Do not use the USB-AC adaptor with any other device.
- Never use the power cord with another device.
- Use only the USB-AC adaptor and USB cable specified in this manual for charging. Use of any other type of devices may result in improper charging.

Checking the Current Battery Level

As battery power is consumed, a battery indicator on the monitor screen indicates its current level as shown below.

Level		High ← → Low			
Battery Indicator	Camera				
	Controller				
Indicator Color		White	White	Red	Red

indicates battery power is low. Charge the battery as soon as possible.
indicates that the battery is about to go dead. Charge the battery immediately.

- The level shown by the battery indicator may change when you switch between the REC mode and PLAY mode.
- Leaving the camera for about 5 days with no power supplied while the battery is dead will cause its date and time settings to be cleared. A message telling you to configure time and date settings will appear the next time you turn on the camera after restoring power. When this happens, configure date and time settings (page 68).
- See page 115 for information about battery life and number of shots.

■ Camera-Controller Wireless Connection (Bluetooth)

The camera and controller communicate over a Bluetooth wireless technology connection. Once you perform the “pairing” operation required for Bluetooth wireless technology connection, the camera and controller will automatically connect to each other whenever you turn them on. Note that the connection will be lost of the distance between the camera and controller becomes too great or if a wireless LAN connection is established between the camera and a smartphone. The controller will turn off after a preset amount of time after the Bluetooth wireless technology connection is lost. The camera will remain on, so you can shoot images by pressing its shutter button.

IMPORTANT!

- Your camera has Bluetooth wireless technology communication functionality built in. Avoid operating the camera (including camera standalone operations) inside of aircraft or anywhere else where wireless data communication is restricted.

NOTE

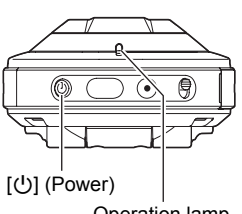
- The Bluetooth connection settings of this camera cannot be changed.
- The camera and controller’s Bluetooth wireless technology will not connect to any other type of device.

■ To turn on power

Both the camera and controller need to be turned on in order to use them.

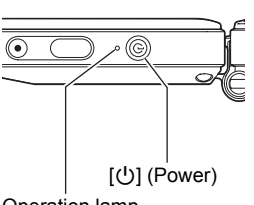
Camera

Press [⏻] (Power).



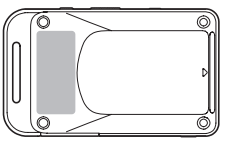
Controller

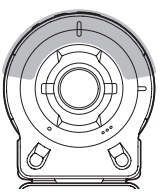
Press [⏻] (Power).



- Turning on the camera causes the camera and controller operation lamps to light green, and automatically starts an operation to establish a Bluetooth wireless technology connection between the camera and controller. An image appears on the controller and shooting is enabled.
- The connection between the camera and controller is affected by their orientation and by the distance between them.

- The maximum range for shooting with the controller's shutter button is around 10 meters (32.8'). The maximum range for viewing the image on the controller's monitor screen is around five meters (16.4').
- If the connection is poor, the controller operation lamp will flash green and "LOW" (Bluetooth communication status) will appear on the monitor screen. Camera response may be slow if you perform an operation on the controller while communication conditions are bad. If this happens, try adjusting the orientation and the distance between the camera and controller.
- Note the precautions below to ensure stable communication between the camera and controller.
  - Position the controller so it is upright, with its screen in a landscape (horizontal) orientation.
  - Make sure nothing is blocking the back of the controller, which is imprinted with logos and text.
  - Point the back of the controller at the camera.
  - Make sure nothing is blocking the area around the camera's lens ring.
  - Make sure there are no obstacles in the path between the camera and controller.





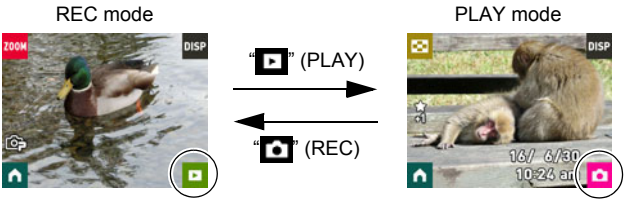
Sleep Mode

If you press [⏻] (Power) on the controller or if you do not perform any controller operation for 25 seconds while there is a Bluetooth wireless technology connection between the camera and controller, the controller image will go blank. Then, if no operation is performed for five seconds, the camera and controller will enter a sleep mode. The operation lamp slowly flashes green while the camera is in the sleep mode. To restore the controller display, press any controller button. The Bluetooth wireless technology connection between the camera and controller is maintained even while they are in the sleep mode, so they can quickly recover when you press a button.

- If the distance between the camera and controller becomes to great or if communication conditions become bad while the camera is in the sleep mode, the connection may be dropped between them.

Toggling Between the REC Mode and PLAY Mode

Touch the icon in the lower right corner of the screen or flick the screen upwards or downwards to toggle between the REC mode and PLAY mode.



NOTE

- If "▶" (PLAY) and/or "📷" (REC) is not displayed, touch "‹" or "DISP".

■ To turn off power

On the camera or the controller, hold down [⏻] (Power).

- Turning off the camera will cause the controller to turn off automatically after about 5 minutes.

Configuring Basic Settings the First Time You Turn On the Camera

The first time you turn on the camera, a screen appears for configuring the display language, date, and time settings. Failure to set the date and time correctly will cause the wrong date and time data to be recorded with images.

IMPORTANT!

- Camera models sold in certain geographic areas may not support display language selection.

1. Turn on the camera and controller (page 25).

- If this is the first time you are turning on power, a language selection screen will appear. If the screen does not appear, check to make sure that the camera is turned on.

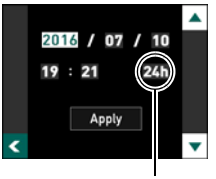
2. Flick (page 17) the controller screen upwards and downwards or touch "▲", "▼" until you find the language you want, and then touch to select it.

3. Touch the date display format you want.

Example: July 10, 2016
YY/MM/DD → 16/7/10
DD/MM/YY → 10/7/16
MM/DD/YY → 7/10/16

4. Set the date and the time.

- Touch the value you want to change (year, month, day, hour, minute) and then touch " ▲ ", " ▼ " to change it.
- To switch between 12-hour and 24-hour format, select "am (pm)"/"24h" and then touch " ▲ ", " ▼ " to change the setting.



12/24 hour switch icon

5. When the date and time settings are the way you want, touch "Apply".

If you make a mistake configuring display language, date, or time settings with the above procedure, refer to the following pages for information about how to correct the settings.
– Display language: Page 69
– Date and time: Page 68

NOTE

- Each country controls its local time offset and the use of summer time, and so they are subject to change.

Preparing a Memory Card

Though the camera has built-in memory that can be used to store images and movies, you probably will want to purchase a commercially available memory card for greater capacity. The camera does not come with a memory card. Images recorded while a memory card is loaded are saved to the memory card. When no memory card is loaded, images are saved to built-in memory.

- Snapshots and movies stored in built-in memory cannot be copied to a memory card.
- For information about memory card capacities, see page 112.

Supported Memory Cards

– microSD Memory Card
– microSDHC Memory Card
– microSDXC Memory Card

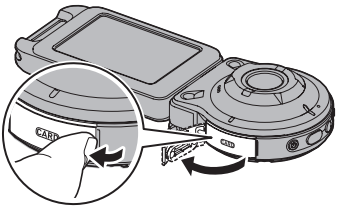
- The above are supported memory card types as of July 2014.
- This camera supports use of microSD memory cards of the following types and capacities: microSD memory cards up to 2GB, microSDHC memory cards from 2GB up to 32GB, microSDXC memory cards from 32GB up to 2TB. Note that the ability to use any particular card with this camera, even if it satisfies the above capacity and type requirements, is not guaranteed.

⚠ Warning!

● Memory cards are small and present a risk of accidentally being swallowed by infants and young children. Keep memory cards out of the reach of infants and young children. If a memory card is ever swallowed accidentally, contact a physician immediately.

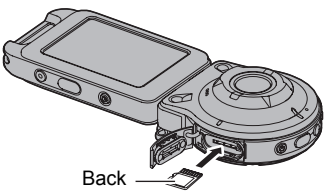
To load a memory card

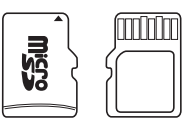
1. **Holding down camera's [⏻] (Power) to turn off the camera and then open the [CARD] cover.**



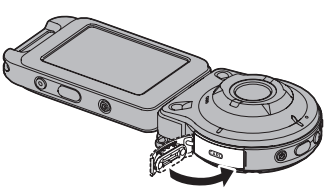
2. **Load a memory card.**

Positioning the memory card so its back is facing upwards (towards the lens side of the camera), slide it into the card slot all the way in until you hear it click securely into place.





3. **Close the [CARD] cover.**



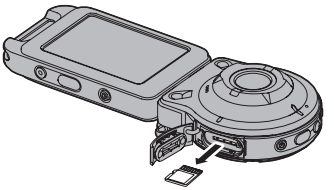
IMPORTANT!

- Never insert anything besides a supported memory card (page 29) into the memory card slot.
- Should water or any foreign object ever get into the card slot, immediately turn off the camera, and contact your retailer or nearest CASIO authorized service center.

■ To replace the memory card

Press the memory card and then release it. This will cause it to pop out of the memory card slot slightly. Pull the card out the rest of the way and then insert another one.

- Turn off the camera before removing the memory card. Removing the card while the camera is on can result in recorded images not being saved and even damage the memory card.



To format (initialize) a new memory card

Format a memory card on the camera before using it for the first time.

IMPORTANT!

- Formatting a memory card that already has snapshots or other files on it, will delete its contents. Normally you do not need to format a memory card again. However, if storing to a card has slowed down or if you notice any other abnormality, re-format the card.
- Be sure to use the camera to format a memory card. Formatting a card on a computer will result in a non-SD standard format, which can greatly slow down processing time and cause compatibility, performance, and other problems.

1. **Load a memory card (page 30).**

2. **Turn on the camera and controller (page 25).**

3. **Touch the “ ” (Home) icon.**

4. **Touch “MENU”.**

5. **Flick upwards and downwards until you find “Setup”, and then touch it.**

6. **Flick upwards and downwards until you find “Format”, and then touch it.**

7. **Touch “Format” and then touch “Yes”.**
This starts the memory card format operation.

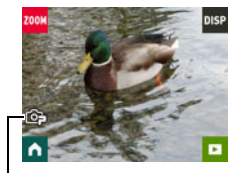
Shooting a Snapshot (Premium Auto)

Your camera has a variety of different recording modes to suit various shooting conditions and objectives (page 39). This section explains general shooting procedures using Premium Auto.
With Premium Auto recording, the camera automatically determines whether you are shooting a subject or scenery, and other conditions. Premium Auto recording delivers higher image.

1. Turn on the camera and controller (page 25).

This causes the camera and controller to start up on the REC mode.

- The factory default recording mode when you purchase the camera is “Premium Auto”. You can use the procedure on page 39 to change the recording mode.
- If the camera is in the PLAY mode, touch “ ” (REC).



Premium Auto icon

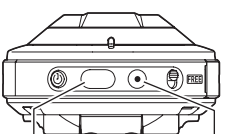
2. Point the camera at the subject.

3. Press the camera or controller shutter button.

The camera will automatically adjust exposure and focus, and then shoot the snapshot.

- Pressing the camera shutter button will shoot a snapshot even if the controller is turned off, and even if the camera and controller are in the sleep mode (page 26).

Camera

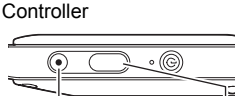

Shutter button

[●] (Movie)

IMPORTANT!

- Due to the characteristics of the CMOS imaging element used by the camera, very fast moving subjects or hand movement during shooting will cause distortion of the recorded image.

Controller


[●] (Movie)

Shutter button

Shooting a Movie

Press [●] (Movie) on the camera or controller to start movie recording.
To stop movie recording, press [●] (Movie) again.
See page 42 for details.

- Movie recording can continue up to 29 minutes.

NOTE

- You also can shoot a snapshot by touching a point on the monitor screen (page 45).
- You can specify the image size for snapshots. See page 46 for more information.

■ Shooting with the Camera Alone

You can use the camera in a stand-alone configuration without turning on the controller or otherwise establishing a connection between it and the camera.

- If an Interval Snapshot (page 36) operation or movie recording (page 42) is in progress, it will continue to shoot images even when controller power is turned off.

■ Shooting with Premium Auto

- In addition to shutter speed and ISO sensitivity, the camera automatically executes the following operation as required when shooting with Premium Auto.
  - Auto Focus is normally performed.
  - The camera automatically determines the focus point on the screen and focuses there.
  - When shooting people, the face detection feature detects the faces of up to 12 individuals and adjusts focus and brightness accordingly.

Snapshot Shooting Precautions

Operation

- If unwanted light is shining onto the lens, shade the lens with your hand or attach the lens hood (page 14) when shooting an image.

Monitor Screen when Shooting Snapshots

- Subject brightness conditions can cause monitor screen response to slow and can cause digital noise in the monitor screen image.
- The image that appears on the monitor screen is for image composition. The actual image will be recorded in accordance with the currently selected recording mode (page 39).

Shooting Indoors under Fluorescent Lighting

- Minute flickering of fluorescent lighting can affect the brightness or color of an image.

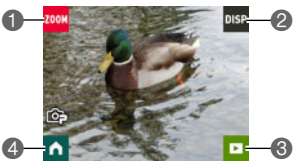
REC Mode Screen

This section explains the contents of the REC mode screens. While the REC mode main screen or home screen is displayed, pressing the camera or controller shutter button will shoot a snapshot.

■ Main Screen

The main screen appears when you turn on the camera or when you enter the REC mode from the PLAY mode.

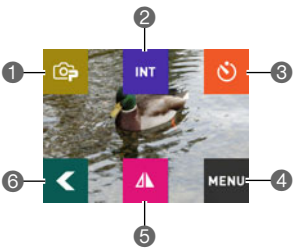
1. Zoom (page 41)
2. Information (page 9)
3. Go to PLAY mode (page 27)
4. Go to home screen



■ Home Screen

The home screen appears when you touch the "" icon on the main screen.

1. Recording mode (page 39)
2. Interval Snapshot (page 36)
3. Self-timer (page 40)
4. Menu (page 44)
5. Display mirror image (page 38)
6. Go to main screen



Shooting Multiple Images at a specified Interval (Interval Snapshot)

You can use Interval Snapshot to shoot snapshots and movies automatically at a specified interval.

■ To start an Interval Snapshot operation

1. On the REC mode main screen, touch the "" (Home) icon.

2. On the home screen, touch the "INT" (Interval Snapshot) icon.

3. Touch the "" (Interval Setting) icon.

4. Touch "Interval" or "Shooting Style" and configure the settings as desired.

Interval	Specifies the shooting interval.
Shooting Style	Snapshot + Movie: Shoots five snapshots followed by a five-second movie. Movie Only: Shoots a five-second movie. Audio is also recorded with this setting. Snapshot Only: Shoots a snapshot.

5. Touch the "" (Back) icon.

6. Touch "Start".

This starts the Interval Snapshot operation.

- Starting an Interval Snapshot operation causes the camera and controller to enter a sleep state and standby for recording of the images. This will be indicated by the camera's operation lamp flashing green.
- Pressing any controller button to recover from the sleep mode will cause the number of recorded images to appear on the monitor screen (Display Limit: 9999). The Interval Snapshot will continue after the displayed number of images reaches 9999. Recording of a large number of images requires power from the provided USB-AC adaptor, etc.

■ To stop an Interval Snapshot operation

1. On the controller, press any button to recover from the sleep state.

2. Touch "Exit".

This stops the Interval Snapshot operation.

■ To shoot images manually during an Interval Snapshot operation

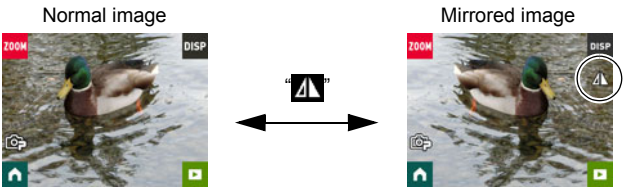
Pressing the shutter button on the camera during an Interval Snapshot operation will shoot a snapshot. Pressing [●] (Movie) on the camera will record a five-second movie.

NOTE

- Nothing is displayed on the monitor screen during an Interval Snapshot operation.
- Interval Snapshot images are shot using Auto Focus.
- Camera image stabilization is applied during movie recording by an Interval Snapshot operation. Note, however, that image stabilization does not prevent image blur due to subject movement.
- The current shooting setup, including zoom, cannot be changed while an Interval Snapshot operation is in progress. A snapshot can be recorded with camera operations only, and not by operating the controller.
- If the camera battery goes dead during an Interval Snapshot operation, the operation will terminate. The controller battery going dead does not affect an ongoing Interval Snapshot operation. To stop the Interval Snapshot operation in this case, hold down [⏻] (Power) on the camera.
- If you are performing manual camera operations when the Interval Snapshot operation reaches a shooting interval, Interval Snapshot recording for that interval will be skipped.

Self-shooting (Mirror)

You can use this function to display a mirror image of controller display. This comes in handy when using the controller to compose self-shot images. The image is recorded in normal orientation (not mirror imaged).



1. **On the REC mode main screen, touch the "" (Home) icon.**

2. **On the home screen, touch the "" (Mirror) icon.**

This displays a mirror image of the controller screen.

- The home screen icon changes to while a mirror image is displayed.

3. **Compose the image on the controller and then press the shutter button to shoot.**

NOTE

- You can change an image displayed on the main screen to a mirror image by flicking the image.

Changing the Recording Mode

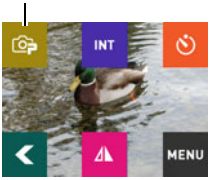
In addition to Premium Auto, your camera lets you select from among five ART SHOT scenes that apply different effects to your photos.

1. Turn on the camera and controller (page 25).

2. On the REC mode main screen, touch the "" (Home) icon.

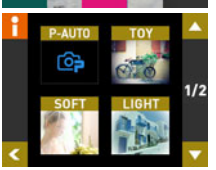
3. On the home screen, touch the recording mode icon in the upper left corner of the screen.

Recording mode icon



4. Touch the icon of the recording mode you want to use.

- You can touch "" or "" to scroll the screen and view other available modes.
- Touching "" in the upper left corner of the screen and then touching a recording mode icon will display detailed information about the mode.



P-AUTO (Premium Auto)		The camera automatically determines whether you are shooting a subject or scenery, and other conditions. Premium Auto recording delivers high image quality (page 32).
ART SHOT	**TOY (Toy Camera)**	Dark edges and altered hues for toy camera effect.
	SOFT (Soft Focus)	Overall blurring for a soft, romantic effect.
	LIGHT (Light Tone)	Weak contrast for a feeling of airy refinement.
	SEPIA (Sepia)	Sepia tones create a decidedly retro look.
	MONO (Monochrome)	The strong contrast and graininess of black and white.

5. Press the shutter button to shoot.

NOTE

- Selecting an ART SHOT scene will automatically enable auto focus.
- ART SHOT effects will not be applied to a movie shot while an ART SHOT scene is selected.
- Make-up cannot be turned on while an ART SHOT scene is being used.

■ Auto Focus Restrictions

- Any of the following can make proper focus impossible.
  - Solid color wall or other very low contrast subject
  - Strongly back lit subject
  - Very shiny subject
  - Blinds or other subject with a repeating horizontal pattern
  - Multiple subjects at varying distances from the camera
  - Subject in a dark location
  - Camera movement while shooting
  - Fast-moving subject
  - Subjects outside the focus range of the camera

Using the Self-timer (Self-timer)

You can use the procedure below to configure the camera to shoot a snapshot automatically five seconds after the self-timer icon is touched.

1. **In the REC mode main screen, touch the "" (Home) icon.**

2. **On the home screen, touch the "" (Self-timer) icon.**

The camera will shoot an image in 5 seconds.

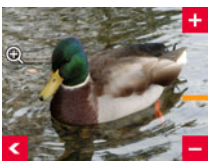
- Certain camera and controller communication conditions may cause the count down time to be slightly off.

Shooting with Zoom

Your camera is equipped with digital zoom, that lets you zoom an image up to 4X. Note that a digital process is used to enlarge the center of the image, so there is deterioration of image quality.

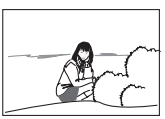
1. In the REC mode main screen, touch the "ZOOM" (Zoom) icon.

- You can also display the zoom ("+", "–") buttons by spreading or squeezing your fingers on the screen.



2. Touch "+", "–" to zoom.

+ (Telephoto)



– (Wide Angle)

+ (Telephoto) : Enlarges the subject and narrows the range.
– (Wide Angle) : Reduces the size of the subject and broadens the range.

3. After the zoom factor is the way you want, touch "".

4. Press the shutter button to shoot the image.

NOTE

- Telephoto images are prone to blurring caused by camera movement when you press the shutter button. Because of this, stabilizing the camera by placing it on a level surface, etc. is recommended.
- Zoom operations are disabled during Interval Snapshot shooting.
- "⊕" is displayed on the monitor screen while digital zoom is being used.

Recording a Movie

Your camera lets you record Full HD movies. Movie quality details are shown in the table below.

Movie Quality	Full HD
Frame Rate	30fps
Image Size (Pixels)	1920×1080
Aspect Ratio	16:9

1. **Select "Premium Auto" as the recording mode.**

2. **On the REC mode main screen, touch the "" (Home) icon.**

3. **On the home screen, touch "MENU".**

4. **Touch "", "" to display "Max Recording Time".**

5. **Touch the recording time you want to select.**

15 sec	Movie recording automatically stops after 15 seconds.
OFF	Movie recording can continue up to 29 minutes.

6. **Press [●] (Movie).**

This starts movie recording.

- To stop an ongoing movie recording operation, press [●] (Movie).
- Each movie can be up to 29 minutes long. If you select "OFF" in step 5, movie recording stops automatically after 29 minutes of recording. Movie recording also will stop automatically if memory becomes full before you stop movie recording by pressing [●] (Movie) again.
- In the case of movie recording, an Auto Focus operation is performed at the beginning of recording and then focus remains fixed. A "" (Close-range indicator) appears on the monitor screen when the subject is close to the camera.

NOTE

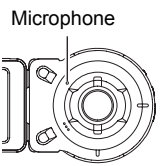
- ART SHOT effects will not be applied to a movie shot while an ART SHOT scene is selected.

Image stabilization during movie recording

Image stabilization is always enabled during movie recording. Note, however, that image stabilization does not prevent image blur due to subject movement during movie recording. Also, image stabilization results in a narrower angle of view during movie recording.

IMPORTANT!

- Spending a long time using movie recording will cause the camera to become slightly warm to the touch. This is normal and does not indicate malfunction.
- The camera also records audio along with movies. Note the following points when shooting a movie.
  - Take care that the microphone is not blocked by your fingers, etc.
  - Good audio recording results are not possible when the camera is too far away from what you are trying to record.



- Shooting movies for long periods in areas where temperature is relatively high can cause digital noise (dots of light) to appear in the movie image. A rise in the camera's internal temperature also may force movie recording to stop automatically. If this happens, stop recording and allow the camera to cool down, which should cause normal operation to resume.
- Using the camera's built-in memory or certain types of memory cards can slow down processing speed. Whenever possible use an Ultra High-Speed Type memory card. Note, however, that not all operations can be guaranteed even if an Ultra High-Speed Type memory card is used. An operation that requires time to record data can result in breaks in the image and/or audio.

NOTE

- Zoom operations are disabled during movie recording. To use zoom, perform the zoom operation before you press [●] (Movie) to start recording.

Advanced Recording Settings

The following are menu operations you can use to configure various camera settings.

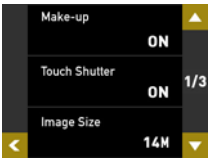
■ Example Menu Screen Operation

1. On the REC mode main screen, touch the "" (Home) icon.

2. On the home screen, touch "MENU".

This will display the menu screen.

- Menu contents are different in the REC mode and PLAY mode.



3. Flick the screen image upwards or downwards or touch "", "" to scroll through items until the one whose setting you want to change is displayed.

- To cancel and exit the menu, touch "" or press the controller's shutter button.

4. Touch the item.

5. Configure the setting of the item in accordance with the screen contents.

- To navigate back to the previous menu level, touch "".

6. After the setting is the way you want, touch "" to return to the main screen.

- Your setting will be applied when you return to the main screen.

NOTE

- Some menu items may not be available, depending on the recording mode being use.

■ Menu Operations in This Manual

Menu operations are represented in this manual as shown below. Touch the indicated icons and items, and perform operations as they are indicated, from left to right.

Procedure

Enter the "REC Mode" → → MENU → Touch Shutter

Recording Beautiful Portraits (Make-up)

Procedure

Enter the "REC Mode" → ⌂ → MENU → Make-up

When turned on, Make-up smoothes the skin texture of the subject and softens facial shadows caused by harsh sunlight for better looking portraits.

Using Touch Shutter (Touch Shutter)

Procedure

Enter the "REC Mode" → ⌂ → MENU → Touch Shutter

You can use the procedure below to shoot a snapshot.

1. **Touch "ON".**

2. **Point the camera at the subject.**

3. **When you want to shoot, touch the monitor screen.**

The camera automatically comes into focus and then shoots.

- You can still use the shutter button to shoot even when "ON" is selected for Touch Shutter.

NOTE

- Be sure to touch the center of the screen. Touching the outer periphery of the screen will not release the shutter.
- Holding down the center of the screen will not release the shutter. Touch and immediately release the screen to shoot.
- The camera automatically determines the focus point. The focus point is not where you touch the screen.

Changing the Image Size (Image Size)

Procedure

Enter the "REC Mode" → ⌂ → MENU → Image Size

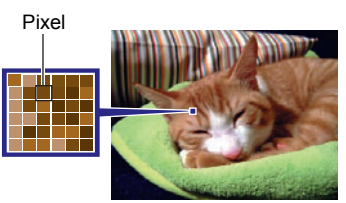
This setting can be used to configure snapshot image size.

Image Size (Pixels)	REC Screen Icon Display	Suggested Print Size and Application	Description
14M (4320×3240)	14M	Poster Print	Good detail for better clarity even for images cropped from the original on a computer, etc.
16:9 (4320×2432)	16:9	Poster Print	
5M (2560×1920)	5M	A4 Print	Good detail

- The initial factory default image size setting is 14M (14 million pixels).
- You should regard the print paper sizes suggested here as guidelines only (200 dpi print resolution).

■ Pixels and image size

A digital camera image is a collection of small dots called "pixels". The more pixels there are in an image, the more detail there will be. However, you generally can do with fewer pixels when printing an image (L size) through a print service, attaching an image to e-mail, when viewing the image on a computer, etc.
The size of an image indicates how many pixels it contains, and is expressed as horizontal pixels×vertical pixels.



Example:

Image size	pixels
14M	4320×3240 (Approximately 14 million pixels)
5M	2560×1920 (Approximately 5 million pixels)

- Note that larger images have more pixels, so they take up more memory space.
- For information about image size and number of images that can be stored, see page 112.
- For information about movie image size, see page 112.

Specifying the Maximum Movie Recording Time (Max Recording Time)

Procedure

Enter the "REC Mode" → ⌂ → MENU → Max Recording Time

See page 42 for details.

Shooting with Brightness Compensation (EV Shift)

Procedure

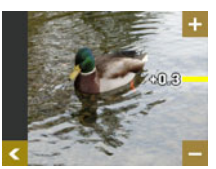
Enter the "REC Mode" → ⌂ → MENU → EV Shift

You can manually adjust an image's exposure value (EV value) before shooting it.

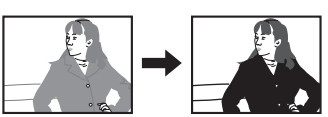
- Exposure Compensation Range: –2.0 EV to +2.0 EV
- Unit: 1/3 EV

1. Touch "+", "–" to adjust the exposure compensation value.

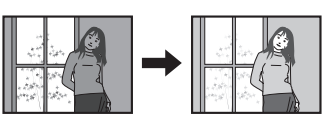
- To cancel exposure compensation, change the EV value to 0.0.



Decreases the EV value. A lower EV value is best for dark-color subjects and for shooting outdoors on a clear day.



Increases the EV value. A higher EV value is best for light-colored subjects and backlit subjects.



2. Touch "↩" (Back) to return to the main screen.

3. Press the shutter button to shoot.

The exposure compensation value you set remains in effect until you change it or turn off the camera (which causes it to revert to "0.0").

NOTE

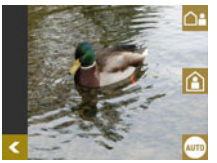
- When shooting under very dark or very bright conditions, you may not be able to obtain satisfactory results even after performing exposure compensation.

Adjusting Hue when Shooting (White Balance)

Procedure

Enter the "REC Mode" → ⌂ → MENU → White Balance

You can adjust white balance to match the source of light available where you are shooting and avoid the blue cast that results when shooting outdoors and the green cast that results when shooting indoors.



1. Touch the type of white balance you want to select.

You can see the affect of the white balance setting you select on the monitor screen.

Setting	REC Screen Icon Display	Description
AUTO **Auto**	AWB	Configures the camera to adjust white balance automatically
Outdoors		For shooting outdoors
Indoors		For shooting indoors

- When "Auto" is selected for the white balance setting, the camera automatically determines the white point of the subject. Certain subject colors and light source conditions can cause problems when the camera tries to determine the white point, which makes proper white balance adjustment impossible. If this happens, select the white balance setting that matches your shooting conditions.

2. Touch "‹" (Back) to return to the main screen.

3. Press the shutter button to shoot.

Enabling Auto Rotation of Images to Match Camera Orientation (Auto Rotate)

Procedure

Enter the “REC Mode” → ⌂ → MENU → Auto Rotate

When this function is enabled (ON), the camera senses its physical orientation and automatically rotates the image accordingly. Playback while Auto Rotate is enabled (ON) will automatically display the image in the orientation it was in when recorded. When this function is disabled (OFF), images are recorded without rotation, regardless of the camera’s physical orientation.

NOTE

- When this function is enabled (ON), rotating the camera 180 degrees also causes the saved image to be rotated 180 degrees. Images shot with other orientations are saved in the orientation when they were shot.

Viewing Snapshots and Movies

Play Mode Screen

While in the PLAY mode, you can use the controller screen to view images your have recorded. You can also press the camera's shutter button or [●] (Movie) button to record new images.

■ Main Screen

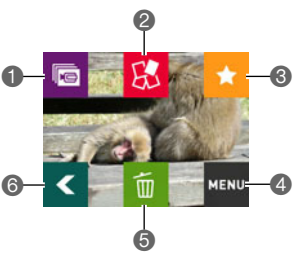
The main screen appears whenever you switch from the REC mode to the PLAY mode.

1. Image Menu (page 54)
2. Information (page 9)
3. Go to REC mode (page 27)
4. Go to home screen

■ Home Screen

The home screen appears when you touch the "" (Home) icon on the main screen.

1. Highlight Movie (page 56)
2. Highlight Photo (page 55)
3. Highlight Score (page 58)
4. Menu (pages 54, 67)
5. Delete (page 52)
6. Go to main screen



Viewing Snapshots

Use the following procedure to view snapshots on the camera's monitor screen.

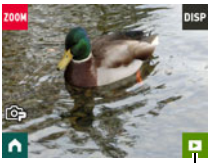
- For information about how to play back movies, see page 52.

1. On the REC mode main screen, touch the "▶" (PLAY) icon or flick the screen upwards or downwards to enter the PLAY mode.

This will display one of the snapshots currently stored in memory.

- Information about the displayed snapshot also is included (page 9).
- You also can clear the information to view only the snapshot (page 9).
- You can zoom the screen image by touching the monitor screen (page 53).

REC mode main screen



"▶" (PLAY)

2. Flick the screen to the left or right to scroll through the snapshots until the one you want is displayed.

NOTE

- Pressing the controller's shutter button while in the PLAY mode or while a menu screen is displayed will switch directly to the REC mode.
- A question mark (?) will be displayed for images that cannot be displayed for some reason.

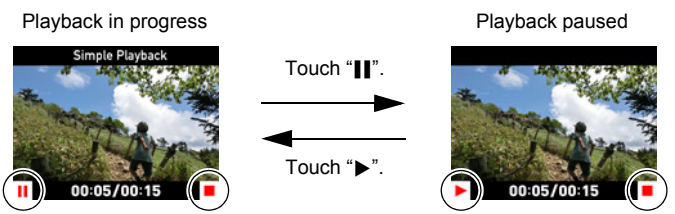
Viewing a Movie

1. On the REC mode main screen, touch the "▶" (PLAY) icon or flick the screen upwards or downwards to enter the PLAY mode.

2. Flick the screen to the left or right to scroll through the movies until the one you want is displayed.

3. Touch "▶" (Movie) to start playback.

- To stop the playback, touch "■".



- Attempting to play back a movie will result in playback at a low frame rate and no audio playback. Play back movies on your smartphone.

Deleting Snapshots and Movies

If memory becomes full, you can delete snapshots and movies you no longer need in order to free up storage and record more images.

IMPORTANT!

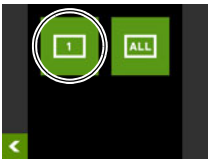
- Remember that a file (image) delete operation cannot be undone.

■ To delete a single file

1. In the PLAY mode, display the file you want to delete.

2. Touch the "⌂" (Home) icon.

3. **Touch the “” (Delete) icon.**



4. **Touch “” (Delete 1 File).**

5. **Touch “” (Delete).**
This will delete the selected file.

■ To delete all files

1. **In the PLAY mode, touch the “” (Home) icon.**

2. **Touch “” (Delete).**

3. **Touch “” (All).**

4. **Touch “Delete”.**
This will cause the message “There are no files.” to appear.

Zooming an On-screen Image

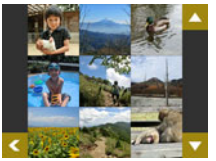
Snapshots can be zoomed on the monitor screen up to 2X.

1. **On the PLAY mode main screen, flick the screen to the left or right to scroll through images until the one you want is displayed.**

2. **Spread your thumb and forefinger (page 17) on the displayed image to enlarge it.**
- You can also enlarge an image by touching the center of the screen.
- Flicking an enlarged screen image will change the part of the image that is displayed.
- Squeezing your thumb and forefinger on the displayed image (page 17) will return the screen to normal.

Viewing the Image Menu

The image menu shows multiple images on a single screen.



1. On the PLAY mode main screen, touch “ ”.

This displays the image menu.

- While the main screen is displayed, spread (to enlarge) or squeeze (to reduce) your fingers on the screen to zoom the displayed image.
- Touch “ ” or “ ”, flick upwards or downwards to scroll to the next page of images.
- To view the normal (single image) display mode, touch the image your want to view.
- In the case of a movie, the first image in the movie is displayed.
- A question mark (?) will be displayed for images that cannot be displayed for some reason.

Rotating an Image (Rotation)

1. On the PLAY mode main screen, touch the “ ” (Home) icon.

2. On the home screen, touch “MENU”.

3. Touch “Rotation”.

4. Touch “ ”.

This will rotate the image 90 degrees to the left.

5. When the image is in the orientation you want, touch “ ”.

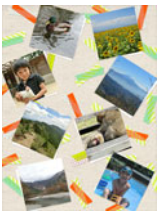
NOTE

- For information about menu operations, see page 44.

Creating a Collage of a Day's Snapshots (Highlight Photo)

You can configure camera settings to automatically select snapshot highlights and generate a collage of them each day. The snapshots included in a Highlight Photo are selected automatically based on their high light scores and shooting condition information recorded along with the snapshots.

- You can use the Highlight Score function (page 58) to change the highlight score of a snapshot.



1. On the PLAY mode main screen, touch the "" (Home) icon.

2. On the home screen, touch "".

3. Touch "", "" to select the date for which you want to create a Highlight Photo.

- Touching "" will display an explanation of this function.

4. Touch "", "" to display the layout you want to use, and then touch it.

5. Touch "Apply".

This displays the Highlight Photo and saves it in camera memory.

- The screen that appears after the images is saved includes a "" (Shuffle) icon. Touch this icon to have the camera re-select snapshots, and generate and save another Highlight Photo.

6. Touch "" (PLAY) to exit Highlight Photo.

NOTE

- An image whose highlight score is "–1" is never included in a Highlight Photo.
- A Highlight Movie generation operation cannot be stopped part way through once it is started.
- When there are more than 9,999 snapshots shot on the same date stored on the memory card, Highlight Photo will select photos from those numbered 1 to 9999.
- The Highlight Photo operation may not be possible while battery power is low.

Creating a Movie of a Day's Images (Highlight Movie)

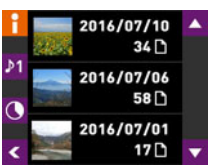
You can configure camera settings to automatically select snapshot and movie highlights, and create a movie of them each day. Images included in a Highlight Movie are selected based on their high light scores and shooting condition information recorded along with the images.

- You can use the Highlight Score function (page 58) to change the highlight score of a snapshot.
- The playback time and effects applied to the Highlight Movie are automatically determined based on the shooting condition information recorded along with the images included in the movie and their highlight score (+1 or 0).

1. On the PLAY mode main screen, touch the "" (Home) icon.

2. On the home screen, touch "" (Highlight Movie) icon.

3. Touch "" (Music), "" (Play time) and configure their settings as desired.



(Music)	Select the background music you want to use.
(Play time)	Specify the playback time of the Highlight Movie.

- Touching "" will display an explanation of this function.

4. Touch "" or "" to select the date for which you want to create a Highlight Movie, and then touch it.

5. Touch "Yes".

This creates and save the Highlight Movie, and displays it on the monitor screen.

NOTE

- A Highlight Movie generation operation cannot be stopped part way through once it is started.
- An image whose highlight score is “–1” is never included in a Highlight Movie.
- A Highlight Movie is FHD movie quality, with an aspect ratio of 16:9. If an image with an aspect ratio that is not 16:9 is incorporated into a Highlight Move, the top and bottom of the image will be cropped as required.
- If a portrait orientation image is incorporated in to a Highlight Movie, there will be black bands on the left and right of the image.
- When there is a total of more than 9,999 snapshot and movie files shot on the same date, Highlight Movie will select photos and movies from the files numbered 1 to 9999.
- The Highlight Movie operation may not be possible while battery power is low.
- Highlight Movie generation may not be possible while battery power is low. Also, a failed operation may result in work files remaining in camera memory. Such files are those that have a file name extension other than JPG or MOV, and a data size of 0 bytes. To delete the work files, connect the camera to a computer (page 73).
- Depending on the number of files and other factors when a Highlight Movie is being created, the creation operation may take some time.
- Only movies that have been shot with this camera are eligible for use in a Highlight Movie.

Changing the Highlight Score of an Image

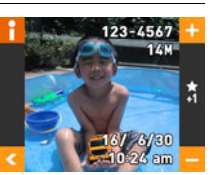
You can use the procedure below to change the highlight score of a snapshot or movie. The highlight score of an image is used when performing the operations described in the table below.

Highlight Score	Description
0	• No score assigned (default) • An image with this score may be selected for a Highlight Snapshot or Highlight Movie.
+1	• An image with this score is given priority for Highlight Snapshot or Highlight Movie selection.
-1	• An image with this score is never selected for a Highlight Snapshot or Highlight Movie.

1. On the PLAY mode main screen, display an image whose highlight score you want to change.

2. Touch the "" (Home) icon.

3. On the Home Screen, touch the "" (Highlight Score) icon.



4. Touch "", "" to change the score of the displayed image.

- Touching "" will display an explanation of this function.

5. After changing the highlight score of the image, touch "" to return to the main screen.

NOTE

- An image's current highlight score is indicated as described below when the image is displayed on the monitor screen.

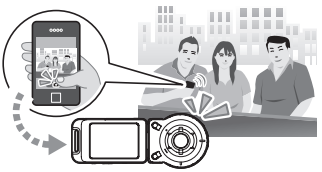
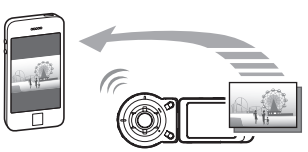
Highlight Score	Indicator
0	
+1	
–1	

- The highlight score function can be used only with snapshots and movies recorded with this camera.

Connecting the Camera with a Smartphone (Wireless LAN)

Controlling Your Camera with a Connected Smartphone

Establishing a wireless LAN connection between the camera and a smartphone (or tablet computer) enables the functions described below. This operation requires installation of the EXILIM Link app on your smartphone.

With this function:	You can do this:	See page:
Remote Capture 	Remotely control and shoot with the camera using a smartphone.	64
Send to phone 	You can select one more snapshot and/or movie file in camera memory and send a copy to a smartphone.	65

IMPORTANT!

- Never use wireless LAN functions inside an aircraft or anywhere else where such operation is restricted.
- The communication distance is subject to change depending on the local conditions and environment.

NOTE

- Note that using wireless LAN functions requires more battery power usage than normal. Make sure that the camera battery is sufficiently charged before starting a wireless LAN operation.
- The operating range depends on the local communication environment and on the type of smartphone you are connected to.

Establishing a Connection between a Smartphone and Your Camera

Installing the EXILIM Link Smartphone app on your smartphone makes it possible to remotely control the camera from your smartphone and to send images recorded with the camera to your smartphone. Search the EXILIM Link app on Google Play (Android) or App Store (iOS) and install it on your smartphone (or tablet computer).

■ App operation guarantees

No guarantees are made concerning the ability to operate the EXILIM Link app on any particular smartphone or tablet.

IMPORTANT!

- For information about operating system version supported by the app, check the information on Google Play or the App Store.
- App functions and the required operating environment are subject to change without notice.

Installing the EXILIM Link App on Your Smartphone

■ Android terminal

1. **Open “Google Play”.**

2. **In the search field, type “EXILIM Link”.**

3. **Install EXILIM Link.**

■ iPhone

1. **Open “App Store”.**

2. **In the search field, type “EXILIM Link”.**

3. **Install EXILIM Link.**

Change SSID and password before using wireless LAN

When establishing a wireless connection between the camera and smartphone for the first time, make sure to change the SSID and password as shown below. At the time of purchase, the default SSID and password settings are the same for all models. Using this model without changing the SSID and password may result in mistaken connections with other devices in the same location as well as allow others access to private information such as images.

- This step is required only once when you use this unit for the first time.

1. If the camera is on, hold down [⏻] (Power) to turn it off.

2. On the camera, hold down [●] (Movie) as you hold down [⏻] (Power) until the camera's operation lamp flashes green.

This will enable connection with a smartphone.

- While the camera is connected with a smartphone, its shutter button and [●] (Movie) button are disabled.

3. For the smartphone Wi-Fi setting, input the camera SSID and password.

This will connect the smartphone to the camera.

- The initial default SSID and password settings are shown below.
  SSID: FR10 Camera
  Password: 00000000
- What you need to do to establish a wireless LAN connection depends on the type of smartphone you are using. For details about how to establish a wireless LAN connection see the user documentation that comes with your smartphone.

4. On your smartphone, start up the EXILIM Link app.

5. On the smartphone, tap "Connection Starting".

This will connect the smartphone to the camera, which is indicated by the camera's operation lamp lighting green.

- If this is the first time you started up the app, its terms of use will appear on your smartphone. Read the terms and then tap "Agree".

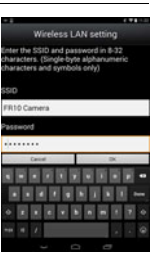
6. Tap "⚙"

7. Enter the new SSID and password.

- For the SSID and password, enter from eight to 32 single-byte characters and symbols.

8. Tap "OK".

The new SSID and password will become effective the next time you turn on the camera.



NOTE

- Note that after changing the SSID and password on the camera, you will also need to change the Wi-Fi settings of the smartphone.
- If you forget your camera SSID and password, you can perform the procedure below to return them to their initial defaults.
  ①Turn off the camera.
  ②While holding down [●] (Movie) and the shutter button on the camera, hold down [⏻] (Power) for about six seconds.
  The process is complete when the operation lamp flashes amber for about 5 seconds.

IMPORTANT!

- Note that the wireless LAN connection between the camera and smartphone is maintained even while the EXILIM Link app is not running on the smartphone or when the app is running in the background. Leaving a wireless LAN connection in effect will shorten camera battery life and cause the camera to become warm. Shut down the EXILIM Link app and turn off the camera to terminate the wireless LAN connection whenever you are not using it.
- Using the smartphone's Wi-Fi setting screen to terminate a wireless LAN connection will cause the camera to enter connection standby. If no connection is established within three minutes, the camera will shut off automatically.

Using a Smartphone as a Camera Remote Controller

This function lets you remotely shoot a snapshot or movie with the camera using a smartphone (Remote Capture). You also can perform remote zoom, self-timer, and other operations as well.

1. If the camera is on, hold down [⏻] (Power) to turn it off.

2. On the camera, hold down [●] (Movie) as you hold down [⏻] (Power) until the camera's operation lamp flashes green.

3. On your smartphone, start up the EXILIM Link app.

4. On the smartphone, tap "Connection Starting".

This will connect the smartphone to the camera, which is indicated by the camera's operation lamp lighting green.

- If this is the first time you started up the app, its terms of use will appear on the smartphone screen. Read the terms and then tap "Agree".

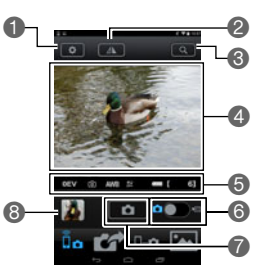
5. On the smartphone, tap "".

6. Compose the image on your smartphone's screen as you shoot.

- After you are finished using Remote Capture exit the app on your smartphone.

■ Controlling Your Camera with a Smartphone

During Remote Capture shooting, you can use the EXILIM Link app to control the camera from a smartphone. This manual explains EXILIM Link operations based on screens that appear using the iPhone version. Some operations may differ depending on your smartphone type.



1. Configures REC settings.
2. Flips the screen image horizontally.
3. Performs a zoom operation.
4. Displays what is being picked up by the camera's lens.
5. Displays current settings.
6. Toggles between snapshot and movie shooting.
7. Shoots an image.
8. Shows the image that was just shot.

NOTE

- Images shot with Remote Capture can also be stored on the smartphone at the time when the image is shot. To do so, tap 1, select "Synchronous Save", and then select "On".

Sending a Snapshot or Movie File from Camera Memory to a Smartphone

You can select one or more snapshot and/or movie file in camera memory and send it to a smartphone. You can select up to 99 files, totaling no more than 1500MB for a single send.

1. **If the camera is on, hold down [⏻] (Power) to turn it off.**

2. **On the camera, hold down [●] (Movie) as you hold down [⏻] (Power) until the camera's operation lamp flashes green.**

3. **On your smartphone, start up the EXILIM Link app.**

4. **On the smartphone, tap "Connection Starting".**

This will connect the smartphone to the camera, which is indicated by the camera's operation lamp lighting green. The smartphone display shows a list of images stored in camera memory.

- If this is the first time you started up the app, its terms of use will appear on the smartphone screen. Read the terms and then tap "Agree".

5. **Tap the images of the files you want to have sent to the smartphone.**

6. **After selecting the images of all of the files you want to send to the smartphone, touch " ".**

This will send the images you selected to the smartphone. You can view the sent images with " ".

IMPORTANT!

- Some smartphone models may not be able to play back movie files.
- Depending on your smartphone model, its operating system version, and/or its remaining storage capacity can cause failure of a movie or snapshot save operation. After send operation, perform the required operation on your smartphone to ensure that the movie or snapshot was saved properly.
- Viewing a movie received on an Android terminal:
  Note that movies are not displayed by Gallery. Movies are stored in a folder named "EXILIM Link". A separate movie player is required to playback movies (whose files have the file name extension MOV). Depending on your movie player, you may not be able to playback movies and/or audio.

NOTE

- You can use the smartphone apps below to view snapshots after sending them.
  – iPhone: Camera Roll
  – Android terminal: Gallery or another photo browser app
- In the case of an iPhone, sent snapshots cannot be deleted with the EXILIM Link app. To delete an image, use Camera Roll.

Other Settings (Set Up)

This section explains menu items that you can use to configure settings and perform other operations in both the REC mode and PLAY mode.

For information about menu operations, see page 44.

Configuring Camera Sound Settings (Camera Sound)

Procedure

⌂ → MENU → Setup → Camera Sound

You can adjust the volume of the sound emitted when the camera is turned on, when an image is shot, when an error occurs, etc.

HIGH	High volume
LOW	Low volume

- Regardless of this setting, no image recording sound is emitted during an interval recording operation (manual shooting or auto shooting).

Using the Vibration Function (Vibration)

Procedure

⌂ → MENU → Setup → Vibration

While “ON” is selected for this function, the controller will vibrate whenever any one of the events described below occurs.

- When a preview of an image that what just shot appears on the controller screen
- When communication between the camera and controller is lost
- When an error occurs

Controller Display Recover Using a Flick Operation (Flick Start)

Procedure

⌂ → MENU → Setup → Flick Start

While “ON” is selected for this function, flicking the screen of the controller while it is in the sleep mode (page 26) will exit the sleep mode and restore the controller display.

Setting the Camera's Clock (Adjust)

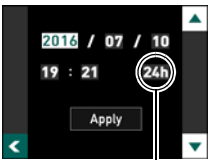
Procedure

⌂ → MENU → Setup → Adjust

1. **Touch the value you want to change (year, month, day, hour, minute).**

2. **Touch " ▲ " or " ▼ " to change the currently selected value.**

- You can specify a date from 2001 to 2049.
- To switch between 12-hour and 24-hour format, touch "am (pm)"/"24h", and then touch " ▲ " or " ▼ ".
- Touching and holding " ▲ " or " ▼ " scrolls at high speed.



12/24 hour switch icon

3. **Touch "Apply".**

Specifying the Date Style (Date Style)

Procedure

⌂ → MENU → Setup → Date Style

You can select from among three different styles for the date.

Example: July 10, 2016

YY/MM/DD	16/7/10
DD/MM/YY	10/7/16
MM/DD/YY	7/10/16

Specifying the Display Language (Language)

Procedure

⌂ → MENU → Setup → Language

■ Specify the display language you want.

1. **On the menu screen, touch “Setup”.**

2. **Touch “Language”.**

3. **Flick upwards and downwards until you find the language you want, and then touch to select it.**

- Camera models sold in certain geographic areas may not support display language selection.

Formatting Built-in Memory or a Memory Card (Format)

Procedure

⌂ → MENU → Setup → Format

If a memory card is loaded in the camera, this operation will format the memory card. It will format built-in memory if no memory card is loaded.

- The format operation will delete all contents on the memory card or in built-in memory. It cannot be undone. Make sure you do not need any data currently on the card or in built-in memory before you format it.
- Formatting built-in memory or a memory card will delete all protected images stored there.
- Check the battery level before starting a format operation and make sure it is not too low. Formatting may not be performed correctly and the camera may stop operating normally if the camera powers down while formatting is in progress.

Resetting the Camera to Factory Defaults (Reset)

Procedure

→ MENU → Setup → Reset

See page 104 for details about the camera's factory default settings.
The settings below are not reset.
clock settings, date style, screen language

Printing

Professional Print Service

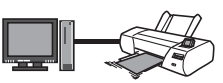
You can take a memory card that contains the images you want to print to a professional print service and have them printed.

Printing on a Home Printer

You can use a printer equipped with a memory card slot to print images directly from a memory card. For details, see the user documentation that comes with your printer.

Printing with a Computer

After transferring the images to your computer, use commercially available software to print.



Printing with a Computer

There are a variety of different ways to print images stored on a computer. This section shows one standard printing example.

■ Printing on a Windows Computer

1. **Use the procedure under "Viewing and Storing Images on a Computer" (page 74) to store the image you want to print, and then display the image on your computer screen.**

2. **Click "Print" and then "Print".**

3. **Configure the desired print settings and then click "Print".**
This will print the selected images.

■ Printing on a Macintosh

1. **Use the procedure under "Connecting the Camera to Your Computer and Saving Files" (page 77) to store the image you want to print, and then display the image on your Macintosh screen.**

2. **Click "File" and then "Print".**

3. **Configure print settings and then click "Print".**
This will print the selected image.

Using the Camera with a Computer

Things you can do using a computer...

You can perform the operations described below while the camera is connected to a computer.

Save images to a computer and view them there		• Save images and view them manually (USB connection) (pages 74, 77).
Play back and edit movies		• You can play back movies (pages 76, 79). • To edit movies, use commercially available software as required.

The procedures you need to perform are different for Windows and the Macintosh.

- Windows users should refer to “Using the Camera with a Windows Computer” on page 73.
- Macintosh users should refer to “Using the Camera with a Macintosh” on page 77.

Using the Camera with a Windows Computer

When you want to do this:	Operating System Version	Required Software	See page:
Save images to a computer and view them there manually	Windows 8.1, Windows 8, Windows 7, Windows Vista	Installation not required.	74
Play movies	Windows 8.1, Windows 8, Windows 7, Windows Vista	QuickTime 7 or higher • You need to download QuickTime 7 on the Web if you want to use it.	76

Viewing and Storing Images on a Computer

You can connect the camera to your computer in order to view and store images (snapshot and movie files).

Never use your computer to modify, delete, move, or rename any image files that are in the camera's built-in memory or on its memory card.
Doing so can cause problems with the camera's image management data, which will make it impossible to play back images on the camera and can drastically alter remaining memory capacity. Whenever you want to modify, delete, move, or rename an image, do so only on images that are stored on your computer.

IMPORTANT!

- Never unplug the USB cable, or operate the camera while viewing or storing images. Doing so can cause data to become corrupted.

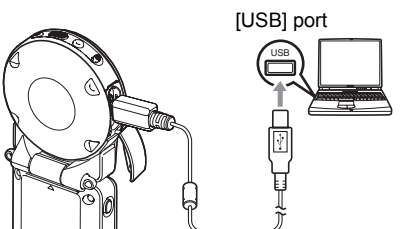
NOTE

- You also can use your computer's card slot (if it has one) or a commercially available card reader to access image files directly from the camera's memory card. For details, see the user documentation that comes with your computer.

■ To connect the camera to your computer and save files

1. **Turn off the camera and then use the micro USB cable that comes with the camera to connect it to your computer.**

- For details about connecting to the camera and precautions when connecting, see page 21.



2. **Press [⏻] (Power) to turn on the camera.**
When you turn on the camera, check to make sure that the color of its operation lamp changes from red to green or amber (page 22). Note that in this case the monitor screen will remain blank.

- The first time you connect the camera to your computer with the USB cable, an error message may appear on your computer. If this happens, disconnect and then reconnect the USB cable.

3. **Windows 8.1, Windows 8 users: Click "Desktop" and then "Explorer". Windows 7, Windows Vista users: Click "Start" and then "Computer".**

4. Double-click “Removable Disk”.

- Your computer recognizes the memory card loaded in the camera (or built-in memory if there is no card) as a removable disk.

5. Right-click the “DCIM” folder.

6. On the shortcut menu that appears, click “Copy”.

7. Windows 8.1, Windows 8 users: Click “Documents”.
Windows 7, Windows Vista users: Click “Start” and then “Documents”.

- If you already have a “DCIM” folder in “Documents”, the next step will overwrite it. If you want to keep the existing “DCIM” folder, you need to change its name or move it to a different location before performing the next step.

8. Windows 8.1, Windows 8 users: On the “Documents” menus, click “Home” and then “Paste”.
Windows 7, Windows Vista users: On the “Documents” menu, click “Organize” or “Edit”, and then “Paste”.

This will paste the “DCIM” folder (and all the image files it contains) into your “Documents” folder. You now have a copy of the files that are in camera memory on your computer.

9. After you finish copying images, disconnect the camera from the computer.

After the copy or read progress dialog on the computer’s screen indicates that the process is complete, close the displayed image and then disconnect the USB cable.

■ To view images you copied to your computer

1. Double-click the copied “DCIM” folder to open it.

2. Double-click the folder that contains the images you want to view.

3. Double-click the image file you want to view.

- For information about file names, see “Memory Folder Structure” on page 81.
- An image that was rotated on the camera will be displayed on your computer screen in its original (unrotated) orientation.
- Viewing CS and interval shot images on a computer will individually display the component images in the group. CS and interval shot images cannot be viewed as a group on a computer.

Playing Movies

To play back a movie, first copy it to your computer and then double-click the movie file. Some operating systems may not be able to play back movies. If this happens, you need to install separately available software.

- If you are unable to play back movies, go to the URL below to download QuickTime 7 and install it on your computer.
  http://www.apple.com/quicktime/

■ Minimum Computer System Requirements for Movie Playback

The minimum system requirements described below are necessary to play back movies recorded with this camera on a computer.

Operating System : Windows 8.1, Windows 8, Windows 7, Windows Vista
CPU : Core 2 Duo 3.0GHz or higher
Required Software : QuickTime 7 or higher

- The above are recommended system environments. Configuring one of these environments does not guarantee proper operation.
- Certain settings and other installed software may interfere with proper playback of movies.

■ Movie Playback Precautions

- Be sure to move the movie data to the hard disk of your computer before trying to play it. Proper movie playback may not be possible for data accessed over a network, from a memory card, etc.
- Proper movie playback may not be possible on some computers. If you experience problems, try the following.
  – Quit any other applications you have running, and stop resident applications.

Using the Camera with a Macintosh

When you want to do this:	Operating System Version	Required Software	See page:
Save images to your Macintosh and view them there manually	OS X	Installation not required.	77
Save images to your Macintosh automatically/ Manage images	OS X	iPhoto, which comes bundled with some Macintosh products.	–
Play movies	OS X 10.6 or higher	QuickTime Player (installed on computer)	79

Connecting the Camera to Your Computer and Saving Files

Never use your computer to modify, delete, move, or rename any image files that are in the camera's built-in memory or on its memory card.
Doing so can cause problems with the camera's image management data, which will make it impossible to play back images on the camera and can drastically alter remaining memory capacity. Whenever you want to modify, delete, move, or rename an image, do so only on images that are stored on your computer.

IMPORTANT!

- Never unplug the USB cable, or operate the camera while viewing or storing images. Doing so can cause data to become corrupted.
- The camera does not support operation with Mac OS X 10.0 to 10.5. Operation is supported with Mac OS 10.6 to 10.9 (using the OS standard USB driver) only.

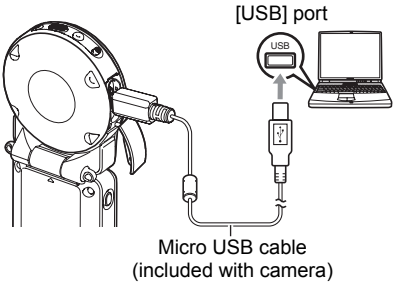
NOTE

- You also can use your computer's card slot (if it has one) or a commercially available card reader to access image files directly from the camera's memory card. For details, see the user documentation that comes with your computer.

■ To connect the camera to your computer and save files

1. Turn off the camera and then use the micro USB cable that comes with the camera to connect it to your Macintosh.

- For details about connecting to the camera and precautions when connecting, see page 21.



2. Press [⏻] (Power) to turn on the camera.

When you turn on the camera, check to make sure that the color of its operation lamp changes from red to green or amber (page 22). Note that in this case the monitor screen will remain blank.

In this mode, your Macintosh recognizes the memory card loaded in the camera (or the camera's built-in memory if it does not have a memory card loaded) as a drive. The appearance of the drive icon depends on the Mac OS version you are using.

- The first time you connect the camera to your Macintosh with the USB cable, an error message may appear on your computer. If this happens, disconnect and then reconnect the USB cable.

3. Double-click the camera's drive icon.

4. Drag the "DCIM" folder to the folder to which you want to copy it.

5. After the copy operation is complete, drag the drive icon to Trash.

6. Disconnect the camera from the computer.

After the copy or read progress dialog on the computer's screen indicates that the process is complete, close the displayed image and then disconnect the USB cable.

■ To view copied images

1. **Double-click the camera's drive icon.**

2. **Double-click the "DCIM" folder to open it.**

3. **Double-click the folder that contains the images you want to view.**

4. **Double-click the image file you want to view.**

- For information about file names, see "Memory Folder Structure" on page 81.
- An image that was rotated on the camera will be displayed on your Macintosh screen in its original (unrotated) orientation.

Playing a Movie

To play back a movie, first copy it to your Macintosh and then double-click the movie file.

■ Minimum Computer System Requirements for Movie Playback

The minimum system requirements described below are necessary to play back movies recorded with this camera on a computer.

Operating System : Mac OS X 10.6 or higher
Required Software: QuickTime Player (installed on computer)

- The above are recommended system environments. Configuring one of these environments does not guarantee proper operation.
- Certain settings and other installed software may interfere with proper playback of movies.

■ Movie Playback Precautions

Proper movie playback may not be possible on some Macintosh models. If you experience problems, try the following.

– Shut down other applications that are running.

IMPORTANT!

- Be sure to move the movie data to the hard disk of your Macintosh before trying to play it. Proper movie playback may not be possible for data accessed over a network, from a memory card, etc.

Files and Folders

The camera creates a file each time you shoot a snapshot, record a movie, or perform any other operation that stores data. Files are grouped by storing them in folders. Each file and folder has its own unique name.

- For details about how folders are organized in memory, see “Memory Folder Structure” (page 81).

	Name and Maximum Number Allowed	Example
File		
	Each folder can contain up to 9999 files named CIMG0001 through CIMG9999. The extension on the file name depends on the file type.	26th file name: CIMG0026.JPG Extension Serial number (4 digits)
Folders		
	Folders are named from 100CASIO to 999CASIO. There can be up to 900 folders in memory.	100th folder name: 100CASIO Serial number (3 digits)

- You can view folder and file names on your computer. For details about how file names are displayed on the camera’s monitor screen, see page 9.
- The total number of folders and files allowed depends on the image size and quality, and capacity of the memory card being used for storage.

Memory Card Data

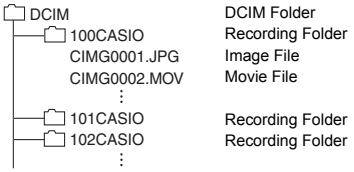
The camera stores images you shoot in accordance with the Design Rule for Camera File System (DCF).

■ About DCF

The following operations are supported for DCF-compliant images. Note, however, that CASIO makes no performance guarantees concerning these operations.

- Transferring this camera’s DCF-compliant images to another manufacturer’s camera and view them.
- Printing this camera’s DCF-compliant images on another manufacturer’s printer.
- Transferring another camera’s DCF-compliant images to this camera and view them.

■ Memory Folder Structure



■ Supported Image Files

- Image files shot with this camera
- DCF-compliant image files

This camera may not be able to display an image, even if it is DCF-compliant. When displaying an image recorded on another camera, it may take a long time for the image to appear on this camera's monitor screen.

■ Built-in Memory and Memory Card Data Handling Precautions

- Whenever copying memory contents to your computer, you should copy the DCIM folder and all of its contents. A good way to keep track of multiple DCIM folders it to change their names to dates or something similar after you copy them to your computer. If you later decided to return a DCIM folder to the camera, however, be sure to change its name back to DCIM. The camera is designed to recognize only a root file with the name DCIM. Note the camera also will not be able to recognize the folders inside the DCIM folder unless they have the names they originally had when you copied them from the camera to your computer.
- Folders and files must be stored in accordance with the "Memory Folder Structure" shown on page 81 in order for the camera to be able to recognize them correctly.

Appendix

Safety Precautions

⚠ DANGER

This symbol indicates information that, if ignored or applied incorrectly, creates the danger of death or serious personal injury.

⚠ WARNING

This indication stipulates matters that have the risk of causing death or serious injury if the product is operated incorrectly while ignoring this indication.

⚠ CAUTION

This indication stipulates matters that have the risk of causing injury as well as matters for which there is the likelihood of occurrence of physical damage only if the product is operated incorrectly while ignoring this indication.

Symbol Examples

This circle with a line through it (⃠) means that the indicated action must not be performed. Indications within or nearby this symbol are specifically prohibited. (The example at left indicates that disassembly is prohibited.)

The black dot (●) means that the indicated action must be performed. Indications within this symbol are actions that are specifically instructed to be performed. (The example at left indicates that the power plug must be unplugged from the electrical socket.)

⚠ DANGER

■ Built-in Rechargeable Battery

- To charge the battery, use only the method specifically described in this manual. Attempting to charge the battery by an unauthorized means creates the risk of battery overheating, fire, and explosion.
- Do not expose or immerse the battery in fresh water or salt water. Doing so can damage the battery, and cause deterioration of its performance and loss of service life.
- The battery is intended for use with a CASIO Digital Camera only. Use with any other device creates the risk of the battery damage, or deterioration of battery performance and service life.

⚠ DANGER

- Failure to observe any of the following precautions creates the risk of battery overheating, fire, and explosion.
  - Never use or leave the battery near open flame.
  - Do not expose the battery to heat or fire.
  - Make sure the battery is oriented correctly when charging it.
  - Never carry or store the battery together with items that can conduct electricity (necklaces, pencil lead, etc.).
  - Never disassemble the battery, pierce it with a needle, or expose it to strong impact (hit it with a hammer, step on it, etc.), and never apply solder to it. Never place the battery into a microwave oven, dehumidifier, high-pressure generating device, etc.
  - Never remove the outer sticker from the battery.

- Do not use or leave the battery under direct sunlight, in an automobile parked in the sun, or in any other area subject to high temperatures. Doing so can damage the battery, and cause deterioration of its performance and loss of service life. Also, these conditions can cause the battery to swell to the point that you may not be able to remove it.

- Battery fluid can damage your eyes. Should battery fluid get into your eyes accidentally, immediately rinse them with clean tap water and then consult a physician.

⚠ WARNING

■ Smoke, abnormal odor, overheating, and other abnormalities

- Continued use of the camera while it is emitting smoke or strange odor, or while it is overheating creates the risk of fire and electric shock. Immediately perform the following steps whenever any of the above symptoms are present.
  1. Turn off the camera.
     * If the camera will not turn off for some reason, press the [RESET] button (page 7).
  2. If you are using the USB-AC adapter to power the camera, unplug the power plug from the power outlet.
  3. Contact your retailer or nearest CASIO authorized service center.

■ Keep Away From Fire

- Never expose the camera to fire, which can cause it to explode and creates the risk of fire and personal injury.

■ Avoid Use While In Motion

- Never use the camera to record or play back images while operating an automobile or other vehicle, or while walking. Looking at the monitor while in motion creates the risk of serious accident.

■ USB-AC Adapter

- Misuse of USB-AC adapter creates the risk of fire and electric shock. Be sure to observe the following precautions.
  – Use only the specified USB-AC adapter.
  – Never use the USB-AC adapter with another device.
  – Use a power outlet that matches the power supply specified for the USB-AC adapter.
  – Never plug the USB-AC adapter or power cord into a wall outlet that is shared by other devices, or into a shared extension cord.
  – Never locate the USB-AC adapter near a stove or other heating device.
- Misuse of the USB-AC adapter can cause them to become damaged, creating the risk of fire and electric shock. Be sure to observe the following precautions.
  – Never place heavy objects on the USB-AC adapter or subject it to direct heat.
  – Do not modify the USB-AC adapter, allow it to become damaged, or forcibly bend it.
  – Do not twist or pull on the power cord.
  – When in use, locate the cord where it will not be tripped over.

⚠ WARNING

- Never touch the power plug while your hands are wet. Doing so creates the risk of electric shock.

- Should the power cord or power plug become damage, contact your retailer or nearest CASIO authorized service center.

- Do not use the USB-AC adapter in areas where liquids* might spill on them. Liquids create the risk of fire and electric shock.
  * Liquids: Water, sports drinks, seawater, animal or pet urine, etc.

- Do not place a flower vase or any other liquid container on top of the USB-AC adapter. Water creates the risk of fire and electric shock.

- Do not touch the camera or USB-AC adapter during lightning storms.

If a power cord was included with your camera

- The power cord that comes with the camera is designed for use in the country where the camera was purchased. If you use the camera in another country, be sure to use a power cord that conforms to that country's ratings and power supply voltage. Use of an improper power cord creates the risk of fire and electric shock.

- Before going out, be sure to unplug the USB-AC adapter from the power outlet and put in a place away from objects used by animals and pets. An animal or pet chewing on the power cord can cause it short, leading to the risk of fire.

■ Water and Foreign Matter

- Water, other liquids, or foreign matter (especially metal) getting inside the camera creates the risk of fire and electric shock. Immediately perform the following steps whenever any of the above symptoms are present. Particular care is required when using the camera where it is raining or snowing, near the ocean or other body of water, or in a bathroom.
  1. Turn off the camera.
     * If the camera will not turn off for some reason, press the [RESET] button (page 7).
  2. If you are using the USB-AC adapter to power the camera, unplug the power plug from the power outlet.
  3. Contact your retailer or nearest CASIO authorized service center.

■ Disassembly and Modification

- Except when disposing of the camera, never try to take it apart or modify it in any way. Doing so creates the risk of electric shock, burn injury, and other personal injury. Be sure to leave all internal inspection, maintenance, and repair up to your retailer or nearest CASIO authorized service center.

⚠ WARNING

■ Dropping and Rough Treatment

- Continued use of the camera after it is damaged by dropping or other rough treatment creates the risk of fire and electric shock. Immediately perform the following steps whenever any of the above symptoms are present.
  1. Turn off the camera.
     * If the camera will not turn off for some reason, press the [RESET] button (page 7).
  2. If you are using the USB-AC adapter to power the camera, unplug the power plug from the power outlet.
  3. Contact your retailer or nearest CASIO authorized service center.

■ Memory Cards

- Memory cards are small and present a risk of accidentally being swallowed by infants and young children. Keep memory cards out of the reach of infants and young children. If a memory card is ever swallowed accidentally, contact a physician immediately.

■ Precaution when Camera is On

- Do not touch the camera for long periods while it is on. The camera becomes warm when on, and long term contact creates the risk of low-temperature burns.

■ Interference with other digital devices

- Should you notice radio interference or other problems on other devices is being caused while using this product, do not use the wireless functions of this product. Use of wireless functions creates the risk of radio interference and abnormal operation of other devices.
- When in a medical facility or aircraft, comply with instructions of personnel in charge. Electromagnetic waves and other signals emitted by the camera's wireless function create the risk of accident.
- Do not use the camera's wireless function while in the vicinity of high precision digital devices or digital devices that use weak signals. Doing so can interfere with proper operation of such digital devices and create the risk of accident.
- When using the camera's wireless function, keep it away from any person wearing a pacemaker. Magnetism emitted by the camera may affect cardiac pacemakers and other medical devices. Should you ever notice any abnormality, immediately move away from the product and contact a physician.
- On a crowded train or any other crowded location where there is the possibility of being in the vicinity of a person wearing a cardiac pacemaker, turn off the camera. Radio waves emitted by the camera's wireless function may affect pacemaker operation.

⚠ CAUTION

■ USB-AC Adapter

- Misuse of the USB-AC adapter creates the risk of fire and electric shock. Make sure you observe the following precautions.
  - Never cover the USB-AC adapter or power cord with a quilt, blanket, or other cover while it is in use, and do not use it near a heater. Doing so can interfere with heat radiation and cause the area around them to become hot.
  - Do not use detergent when cleaning the power cord, the USB-AC adapter, or the USB cable (especially the plugs and jacks).
  - Insert the power plug into the wall outlet as far as it will go.
  - Unplug the power plug from the wall outlet before leaving the camera unattended for long periods, such as when leaving on a trip, etc.
  - At least once a year, use a cloth or vacuum cleaner to clean any dust build up on the prongs of the power plug and in the area around them.
  - (Power cord included with your camera) When unplugging from the wall outlet, never pull on the power cord. Grasp the power plug and pull.

■ Built-in Rechargeable Battery

- If battery charging does not end normally within the specified charging time, stop charging anyway and contact your local CASIO authorized service center. Continued charging creates the risk of battery overheating, fire, and explosion.
- Be sure to read the user documentation that comes with the camera before using or charging the battery.
- Store batteries in a location that cannot be reached by infants and young children. When using a battery where infants and young children are present, be on guard to ensure that they do not have the chance to remove the battery from the camera.
- Do not leave batteries near areas used by pets. A pet chewing on a battery can lead to accidents caused by the battery leaking, overheating, or exploding.
- Should fluid from a battery accidentally get onto clothing or your skin, immediately rinse it off with clean tap water. Prolonged contact with battery fluid can cause skin irritation.

■ Connections

- Never plug any devices that are not specified for use with this camera into connectors. Connecting a non-specified device creates the risk of fire and electric shock.

■ Unstable Locations

- Never place the camera on an unstable surface, on a high shelf, etc. Doing so can cause the camera to fall, creating the risk of personal injury.

⚠ CAUTION

■ Locations To Be Avoided

- Never leave the camera in any of the following types of locations. Doing so creates the risk of fire and electric shock.
  - Areas subject to large amounts of humidity or dust
  - Food preparation areas or other locations where oil smoke is present
  - Near heaters, on a heated carpet, in areas exposed to direct sunlight, in a closed vehicle parked in the sun, or other areas subject to very high temperatures

■ Monitor Screen

- Do not apply strong pressure to the LCD panel surface or subject it to strong impact. Doing so can cause the display panel glass to crack and lead to personal injury.

- Should the monitor screen ever become cracked, never touch any of the liquid inside the monitor screen. Doing so creates the risk of skin inflammation.

- Should monitor screen liquid ever get into your mouth, immediately rinse your mouth out and contact your physician.

- Should monitor screen liquid ever get into your eyes or onto your skin, immediately rinse with clean water for at least 15 minutes and contact your physician.

■ Backing Up Important Data

- Always keep backup copies of important data in camera memory by transferring it to a computer or other storage device. Note that data can be deleted in the case of camera malfunction, repair, etc.

Shock resistant, Splashproof, Dustproof

This camera is designed to be shock resistant, splashproof, and dustproof as described below.

- Shock resistant:
  This camera has passed drop testing from a height of 2 meters/6.56 feet* onto a plywood (lauan material)*.
  * Based on CASIO test equivalent to MIL-Standard 810F Method 516.5-Shock. (6 faces, 4 edges: Total of 10 drops.)
- Splashproof:
  Splashproof equivalent to IEC/JIS Class 6 (IPX6) and Class 7 (IPX7). Underwater screen touch operation and shutter button operation not supported.
- Dustproof:
  Corresponds to IEC/JIS Protection Class 6 (IP6X) dustproofing.

* Though the camera is designed to withstand the effects of impact occurring during normal daily use, very strong impact due to very rough handling such as throwing the camera or dropping it from excessive heights can result in serious damage. Even if a drop does not result in functional problems, it can cause scratching and other cosmetic damage to the camera.

IMPORTANT!

- The shock resistance, splashproofing, and dustproofing of this product are based on CASIO test results, and do not constitute any guarantee that the product will perform, will not be damaged, or will not malfunction under such conditions.

■ Precautions before Underwater Use

Submersion and continued shooting up to a depth of 1.0 meters after starting a recording operation above the water surface is supported, subject to the precautions below.

- Check the contact surfaces of the [CARD] cover and [USB] cover gaskets for dirt, sand, and any other foreign matter. Clean contact surfaces by wiping them with a soft, clean, dry cloth. Note that a single strand of hair or a single grain of sand can allow water to leak into the camera.
- Check the [CARD] cover and [USB] cover splashproofing gaskets are free of cracks, scratches, and other damage.
- Close the [CARD] cover and [USB] cover securely into place.
- Never open or close the [CARD] cover or [USB] cover while near water or in an area exposed to sea breezes. Also avoid opening or closing the covers while your hands are wet.

- This camera will sink if dropped underwater. Use the strap or some other means to avoid dropping.
- The splashproofing of this camera protects it against salt water and fresh water only. Protection is not provided against hot spring water.
- Never leave the camera for long periods in a location subjected to very low temperatures or very high temperatures in excess of 40°C (104°F). In particular, avoid leaving the camera in areas exposed to strong direct sunlight, in a motor vehicle on a hot day, etc. Any of these conditions can result in a deterioration of splashproofing.
- Wireless communication with wireless LAN or Bluetooth wireless technology is not supported under water. Connection between a submerged camera and a controller or smartphone is not supported.
- Use of the controller's touch panel is not supported while the controller is submerged.

■ Precautions during Underwater Use

- The camera is designed for use at depths no greater than 1.0 meters and at water temperatures within the range of 0°C to 40°C (32°F to 104°F).
- Do not leave the camera submerged for longer than 30 minutes.
- When repeatedly immersing the camera for underwater user, allow at least 15 minutes to elapse between immersions.
- Never open the [CARD] cover or [USB] cover while the camera is submerged.
- Do not dive into water while holding the camera. Also, do not use the camera in rapids, under a waterfall, or in any other rough water condition. Exposing the camera to strong water pressure can cause leaking and malfunction.
- Take care that you do not drop the camera into water or allow it to strike the surface of the water. Doing so can cause leaking.

■ Precautions after Underwater Use

- Before opening the [CARD] cover and [USB] cover, use a clean, dry, soft cloth to wipe the camera free of all moisture and dirt.
- If you open the [CARD] cover and [USB] cover while the camera is wet, be sure to wipe its inside surfaces free of all moisture before closing it.

■ Cleaning Your Camera after Use

Perform the following steps to clean the camera after using it under water or after it becomes soiled with sand, dirt, or mud. Note that the [CARD] cover and [USB] cover must be closed securely when performing these steps.

1. Immerse the camera in fresh water.

- Fill a bucket or other container with tap water or other fresh water, and immerse the camera for about 10 minutes. Gently wipe dust, dirt, sand, and other matter from the camera with your fingers.
- Do not rub the lens surface or monitor screen while dirty.

2. Wipe the camera dry.

- Use a clean, dry, soft cloth to wipe off the camera, and leave it in a shady place to dry.

IMPORTANT!

- The temperature of the water used to wash the camera should be no greater than 30°C (86°F). Never use detergent, hot water, or strongly running water to clean the camera. Doing so creates the risk of leaking and malfunction.
- Never swing the camera around to remove water, and never use a dryer or other intense heat to dry it.
- Never place the camera in a washing machine to wash it.

■ Precautions after Use

- Do not leave the camera in an area exposed to extreme heat (40°C (104°F) or greater) or cold (–10°C (14°F) or lower). Doing so can cause loss of splashproofing.
- Never use chemical agents for the purpose of cleaning, rust proofing, moisture proofing, etc. Doing so can cause loss of splashproofing.
- Use fresh water to clean the camera within 60 minutes after using it underwater. Failure to do so can cause deterioration of the exterior finish and splashproofing properties.
- In order to maintain splashproofing, replacement of the camera's gaskets is recommended once each year. Note that you will be charged for gasket replacement. Contact a CASIO authorized service center or your original retailer for gasket replacement.

■ Other Precautions

- The accessories that come with the camera are not splashproof.
- Subjecting the camera to extreme impact can cause loss of splashproofing.
- Moisture on the camera can freeze in very cold environments. Ice left on the camera can lead to malfunction. Do not allow moisture to remain on the camera under cold conditions.
- Should water ever leak into the camera and cause malfunction due to improper use, CASIO COMPUTER CO., LTD. will not be held liable for any damage to internal components (battery, recording media, etc.), loss of recorded data, or any expenses incurred to shoot lost images.
- CASIO COMPUTER CO., LTD. shall not be held liable for any accident that may occur while the camera is being used underwater.
- CASIO COMPUTER CO., LTD. shall not be held liable for any damages or for any accident (personal injury, etc.) that occurs while using the camera underwater.

Precautions During Use

■ Data Error Precautions

Your digital camera is manufactured using precision digital components. Any of the following creates the risk of corruption of data in camera memory.

– Removing the memory card while the camera is performing some operation
– Removing the memory card while the operation lamp is flashing green after turning off the camera
– Disconnecting the USB cable while communication is in progress
– Other abnormal operations

Any of the above conditions can cause an error message to appear on the monitor screen (page 110). Perform the action indicated by the message that appears.

■ Operating Environment

- Operating Temperature Requirements: –10 to 40°C (14 to 104°F)
- Operating Humidity: 10 to 85% (non condensation)
- Do not place the camera in any of the following locations.
  – In an area exposed to direct sunlight, or large amounts of moisture, dust, or sand
  – Near heating or cooling devices, or in other areas subjected to extreme changes in temperature or humidity
  – Inside of a motor vehicle on a hot day, or in an area subjected to strong vibration

■ Condensation

Sudden and extreme temperature changes, such as when the camera is moved from the outdoors on a cold winter day into a warm room, can cause water droplets called “condensation” to form on the interior and the exterior of the camera, which creates the risk of malfunction. To prevent condensation from forming seal the camera in a plastic bag before changing locations. Then leave the bag sealed to allow the air inside to naturally change to the same temperature as the air in the new location. After that, remove the camera from the bag for a few hours.

■ Lens

- Never apply too much force when cleaning the surface of the lens. Doing so can scratch the lens surface and cause malfunction.
- You may sometimes notice some distortion in certain types of images, such as a slight bend in lines that should be straight. This is due to the characteristics of lenses, and does not indicate malfunction of the camera.

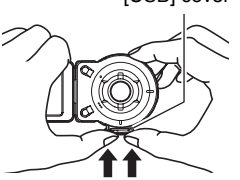
■ Caring for your camera

- Never touch the lens with your fingers. Finger smudges, dirt, and other foreign matter on the lens can interfere with proper operation of the camera. Use a blower or other means to keep the lens and flash window free of dirt and dust, and wipe gently with a soft, dry cloth.
- To clean the camera, wipe it with a soft, dry cloth.

■ Closing the camera's [CARD] cover or [USB] cover

When closing a cover, press down with your thumbs on the left and right, applying equal force. Pressing down on either end with one hand only may not close the cover completely and leave one end out of position.

[CARD] cover or [USB] cover



■ Discarding or Transferring Ownership of a Memory Card or the Camera

The format and delete functions of the camera do not actually delete files from the memory card. The original data remains on the card. Note that responsibility for the data on a memory card lies with you. The following procedures are recommended whenever you discard a memory card or the camera, or if you transfer ownership to another party.

- When discarding a memory card, either physically destroy the memory card or use commercially available data delete software to completely delete the data on the memory card.
- When transferring ownership of a memory card to another party, use commercially available data deletion software to completely delete the data on it.
- Use the format function (page 69) to completely delete the data in built-in memory before discarding or transferring ownership of the camera.

■ Precautions During Wireless Function (Wireless LAN, Bluetooth Wireless Technology) Use

Operation of this product may affect or may be affected by nearby devices that use wireless functionality.

Radio transmission interception

The radio waves that are used to send and receive data can be intercepted by third parties.

Unauthorized access

CASIO COMPUTER CO., LTD. shall be held in no way liable for any unauthorized access and/or use of the access point equipped on this product if the product is ever lost or stolen.

Use as a wireless device

Use the wireless functions of this product only as specifically described in this manual. Any other use is unintended use, and CASIO COMPUTER CO., LTD. shall be held in no way liable for any damages arising out of unintended use.

Magnetism, electrostatic charge, and radio interference

Do not use this product near a microwave oven or any other area where magnetism, electrostatic charge, or radio interference is generated. Radio wave reception may be poor in certain environments.
Also note that other devices using the same 2.4GHz band used by this product may cause reduced processing speeds in both devices.

Connection to a public LAN

This product does not support wireless LAN connection over a public wireless LAN environment.

Intended Areas of Use

1) The wireless LAN functions of this camera are provided for use in the countries and geographic areas below.
   Hong Kong, Singapore, Thailand, The United Arab Emirates (UAE), Paraguay, Venezuela, Panama, Germany, Austria, France, The Netherlands, Spain, Italy, Sweden, Denmark, Slovakia, Poland, and Norway
2) Approval for use under radio regulations in the countries and geographic areas below is granted only when the camera is purchased within that particular country or geographic area.
   Taiwan, Indonesia, Malaysia, and South Korea

■ Other Precautions

The camera becomes slightly warm during use. This is normal and does not indicate malfunction.

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inet_ntop, inet_pton

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Power Supply

Charging

■ If the camera or controller operation lamp starts flashing red...

If the camera or controller operation lamp starts flashing red during charging, it means that further charging is not possible for one of the reasons below. Perform the actions described below to correct the problem and then try charging again.

Ambient temperature or the temperature of the battery is abnormally high or low

Unplug the USB cable from the camera and wait for a while until the camera is within the temperature range of 15°C to 35°C (59°F to 95°F), and then try charging again.

Safety timer activated

A battery that has not been used for a long time, certain types of computers, and connection conditions can cause charging to take longer than normal. If charging takes longer than about five hours, a safety timer will terminate it automatically, even if the battery is not fully charged. If the battery has not been used for a very long time, charging may terminate automatically after only about 60 minutes.

1) Using a battery that has not been used for a long time.
   Disconnect and then reconnect the USB cable to resume charging.
2) Insufficient power supply when connected to computer
   The camera can be charged only via a USB 2.0 standard USB port. Connect directly to a USB port what supplies a current of 500mA.

For details about the power supply capacity of a computer's USB port, contact the manufacturer of the computer. Though disconnecting and then reconnecting the USB cable will resume charging, you may need to do so repeatedly if the power supply capacity of the computer is low.

If problems persist after you perform the above steps or if the battery fails to charge after 5 hours, it could mean that the battery is faulty. Contact your nearest CASIO authorized service center.

Battery Precautions

■ Precautions during Use

- Operation provided by a battery under cold conditions is always less than operation under normal temperatures. This is due to the characteristics of the battery, not the camera.
- Charge the battery in an area where the temperature is within the range of 15°C to 35°C (59°F to 95°F). Outside this temperature range charging can take longer than normal or even fail.

■ Storage Precautions

- Storing the battery for a long time while it is charged can cause deterioration of battery characteristics. If you do not plan to use a battery for some time, fully use up its charge before storing it.
- To prevent over discharging of an unused battery, fully charge it, and then load it in the camera and fully use up the charge about once every six months.

Using the Camera in another Country

■ Precautions during Use

- The bundled USB-AC adaptor is designed for operation with any power supply in the range of 100V to 240V AC, 50/60Hz. Note, however, that the shape of the power plug depends on each country or geographic area. Before taking the camera and USB-AC adaptor along on a trip, check with travel agent about the power supply requirements in your destination(s).
- Do not connect the USB-AC adaptor to a power supply through a voltage converter or similar device. Doing so can lead to malfunction.

Disposing of the Camera

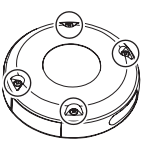
When disposing of the camera, be sure to first remove its built-in lithium ion battery and send it in for recycling.

IMPORTANT!

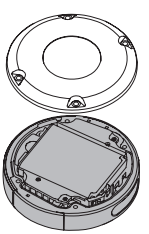
- The battery of this camera is built-in and cannot be replaced by you. Contact your retailer or a CASIO authorized service center to have the battery replaced.
- Make sure that the camera is turned off before removing the battery.
- The edges of the back cover are sharp. Take care not to cut your fingers when removing it.
- When removing screws, use a precision Phillips tip screwdriver.

■ Camera

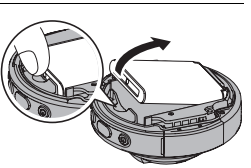
1. **Remove the four screws that secure the back of the camera.**



2. **Remove the back cover.**

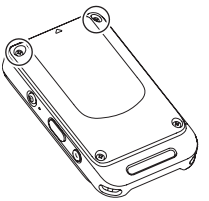


3. **Hook your fingertip at the location indicated in the illustration and remove the battery.**

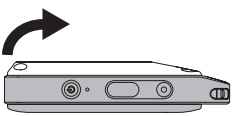


■ Controller

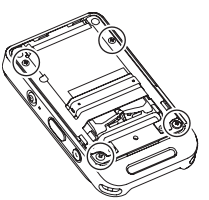
1. **Remove the two screws that secure the back of the controller.**



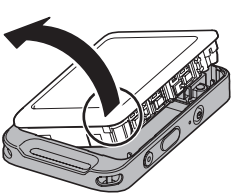
2. **Swing the back cover open in the direction indicated by the arrow.**



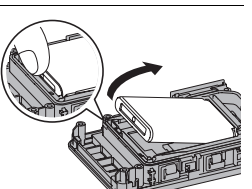
3. **Remove the four screws that secure the back of the controller.**



4. **Holding the monitor screen at the circled location in the nearby illustration, swing it upwards in the direction indicated by the arrow to remove it.**



5. **Hook your fingertip at the location indicated in the illustration and lift the battery up to remove it.**



■ Old Rechargeable Battery Handling Precautions

- Insulate the positive and negative terminals with tape, etc.
- Do not peel the covering off of the battery.
- Do not try to take the battery apart.

Using a Memory Card

See page 29 for information about supported memory cards and how to load a memory card.

■ Using a Memory Card

- If a memory card starts to behave abnormally during image playback, you can restore normal operation by reformatting it (page 69). However, it is recommended that you always take along multiple memory cards whenever using the camera far away from the home or office.
- As you record data to and delete data from a memory card a number of times, it loses its ability to retain data. Because of this, periodic re-formatting of a memory card is recommended.
- Electrostatic charge, electrical noise, and other phenomena can cause data to become corrupted or even lost. Make sure that you always back up important data on other media (CD-R, CD-RW, hard disk, etc.).

■ Memory Card Handling Precautions

Certain types of memory cards can slow down processing speed. Whenever possible use an Ultra High-Speed Type memory card. Note, however, that not all operations can be guaranteed even if an Ultra High-Speed Type memory card is used.

Reset Initial Default Settings

The tables in this section show the initial default settings on menus that appear in the REC mode and PLAY mode when you reset the camera (page 70). This operation also resets some non-menu settings.

- A dash (–) indicates an item whose setting is not reset or an item for which there is no reset setting.

IMPORTANT!

- Some menu items may not be available, depending on the recording mode being use.

■ REC Menu

Make-up	OFF
Touch Shutter	ON
Image Size	14M
Max Recording Time	OFF

EV Shift	0.0
White Balance	Auto
Auto Rotate	ON
Setup	→ See below.

* Default setting depends on country or geographic region.

■ PLAY Menu

Rotation	–
Setup	→ See below.

■ Setup Menu

Camera Sound	HIGH
Vibration	ON
Flick Start	ON
Adjust	–

Date Style	–
Language	–
Format	–
Reset	–
Version	–

■ Interval Snapshot settings (page 36)

Interval	5 min
Shooting Style	Snapshot + Movie

■ Highlight Photo setting (page 55)

Layout	

■ Highlight Movie settings (page 56)

Music	Music 1
Play time	Short

Troubleshooting

Problem	Possible Cause and Recommended Action
Power Supply	
Power does not turn on.	1)The battery of new camera is not charged. Charge the battery before using the camera. 2)The camera battery may be dead. Charge the battery (page 18). If this does not resolve the problem, contact your retailer or a CASIO authorized service center.
The camera suddenly powers down.	1)The battery may be dead. Charge the battery (page 18). 2)The camera's protection function may have activated because camera temperature is too high. Turn off the camera and wait until it cools down before trying to use it again. 3)If, after you turn on power, the operation lamp flashes red and power turns off, it could mean a lens error or some other error occurred. Check to make sure that the battery is charged and try turning power on again a number of times. If power still does not turn on, contact your retailer or a CASIO authorized service center.
Power will not turn off. Nothing happens when a button is pressed.	Use a thin object to press the [RESET] buttons (page 7) near the camera's memory card slot and controller's [USB] port to turn the camera off and then turn on the camera again.
Charging	
The operation lamp does not light red and the battery won't charge.	1)Unplug the USB cable from the camera and controller, and then plug it back in again. 2)Make sure the camera and controller are turned off when you connect the USB cable. Charging may not start if you connect the USB cable while power is turned on.
Image Recording	
Image is not recorded when the shutter button is pressed.	1)If the camera is in the PLAY mode, touch " " (REC) on the main screen to enter the REC mode. 2)If the message "Memory Full" appears, transfer images to your computer, delete images you no longer need, or use a different memory card.
Images are out of focus.	1)If the lens is dirty, clean it off. 2)You may be moving the camera when shooting. When shooting, place the camera on a tabletop or some other stable surface, or find some way to fix the camera in place.

Problem	Possible Cause and Recommended Action
Camera powers down during Self-timer countdown.	The battery may be dead. Charge the battery (page 18).
There is digital noise in images.	Sensitivity may have been increased automatically for a dark subject, which increases the chance of digital noise. Use a light or some other means to illuminate the subject.
A recorded image was not saved.	1)Camera power may have been turned off before the save operation was complete, which will result in the image not being saved. If the battery indicator shows , charge the battery as soon as possible (page 18). 2)You may have removed the memory card from the camera before the save operation was complete, which will result in the image not being saved. Do not remove the memory card before the save operation is complete.
Though available lighting is bright, the faces of people in the image are dark.	Not enough light is reaching the subjects. Adjust EV shift to the + side (page 47).
Subjects are too dark when shooting images in a seashore or ski area.	Sunlight reflected by water, sand, or snow, can cause underexposure of images. Adjust EV shift to the + side (page 47).
The image is out of focus during movie recording.	1)Focusing may not be possible because the subject is outside the focus range. Shoot within the allowable range. 2)The lens may be dirty. Clean the lens (page 94). 3)Focus is fixed during movie recording, so the image can go out of focus if there is a big change in the distance between the camera and subject during recording.
Playback	
The camera will not enter the PLAY mode.	The PLAY mode cannot be entered while an Interval Shot operation is in progress.
The color of the playback image is different from what appears on the monitor screen when shooting.	Sunlight or light from another source may be shining directly into the lens when you are shooting. Position the camera so sunlight does not shine directly into the lens.
Images are not displayed.	This camera cannot display non-DCF images recorded onto a memory card using another digital camera.
Images cannot be rotated.	Snapshot recorded with another camera cannot be rotated. • Snapshots recorded with another camera

Problem	Possible Cause and Recommended Action
File Deletion	
A file cannot be deleted.	The file may be protected. A protected image cannot be deleted.
Wireless LAN	
I can't establish a wireless LAN connection. The wireless LAN connection is broken.	1)The camera cannot connect with a smartphone if they are too far apart from each other. 2)The smartphone may be connected with another wireless LAN. Check the smartphone's Wi-Fi settings and confirm that the camera is selected for wireless LAN connection (page 62). 3)Connection may have been lost due to interference caused by a nearby microwave oven, cordless phone, or other wireless LAN device. Move the camera away from the device causing the problem.
I forgot my SSID and password.	On the camera, hold down [●] (Movie) as you hold down the shutter button and [⏻] (Power) for about six seconds to return the SSID and password to their initial defaults. For information about the initial default SSID and password settings, see page 62.
Bluetooth wireless technology	
A connection cannot be established between the camera and controller.	1)The camera cannot connect with a smartphone if they are too far apart from each other. 2)A Bluetooth connection cannot be established with the camera while it is connected to a smartphone by wireless LAN. Terminate the wireless LAN connection. 3)If the camera is connected to a computer, unplug the USB cable to terminate the connection. 4)If, you still cannot establish a connection, hold down the shutter buttons on the camera and controller as you hold down [⏻] (Power) for about six seconds. This will start the pairing operation required for Bluetooth connection.

Problem	Possible Cause and Recommended Action
Other	
The wrong date and time are displayed, or the wrong date and time are being stored along with image data.	The date and time setting is off. Set the correct date and time (page 68).
The messages on the display are in the wrong language.	The wrong display language is selected. Change the display language setting (page 69).
Images cannot be transferred over a USB connection.	1)The USB cable may not be connected securely to the camera. Check all connections. 2)If the camera is not turned on, turn it on. 3)Your computer may not be able to recognize the camera if you connect via a USB hub. Always connect directly to the computer's USB port.
Language selection screen appears when the camera is turned on.	1)You did not configure initial settings after purchasing the camera or the camera may have been left with a dead battery. Check the camera setup (pages 27, 68). 2)There may be a problem with the camera's memory data. If this is the case, perform the reset operation to initialize the camera's setup (page 70). After that, configure each setting. If the language selection screen does not re-appear when you turn the camera on, it means that the camera's memory management data has been restored. If the same message appears after you turn power back on, contact your retailer or a CASIO authorized service center.
There are various indicators and values on the monitor screen.	The monitor screen shows indicators and other information about shooting conditions and the image you are recording. You can touch the "DISP" on the main screen to select what information you want to include on the display (page 9).
Buttons are not responsive right after the power has been turned on.	With large capacity memory cards there is a delay after the power has been turned on before the buttons become responsive.
Images are not displayed.	1)The camera is turned off. 2)There is no Bluetooth connection between the camera and controller (page 25).

Display Messages

Battery is low.	This message appears when the camera or controller battery goes dead.
Card ERROR	There is something wrong with the memory card. Turn off the camera, remove the memory card and then reload it into the camera. If this message re-appears when you turn the camera back on, format the memory card (page 69). **IMPORTANT!** • Formatting a memory card deletes all its files. Before formatting, try transferring recoverable files to a computer or some other storage device.
Could not save file because battery is low.	Camera's battery power is low, so an image file could not be saved.
Folder cannot be created.	You are trying to record a file while there are already 9999 files stored in the 999th folder. If you want to record more, delete files you no longer need (page 52).
Memory Full	Memory is full with images you recorded and/or files saved by editing operations. Delete files you no longer need (page 52).
SYSTEM ERROR	Your camera system is corrupted. Contact your retailer or a CASIO authorized service center.
There are no files.	There are no files in built-in memory or on the memory card.
This file cannot be played.	The file you are trying to access is corrupted or is a type that cannot be displayed by this camera.
Camera connection was lost. Power will turn off.	A Bluetooth connection between the camera and controller could not be established or maintained (page 108).
File could not be created.	A Highlight Photo or Highlight Movie could not be generated for some reason.

Overheating. Power will turn off.	The camera protection function may have activated because camera and/or controller temperature is too high. Turn off power and wait until the camera or controller cools down before trying to use it again.
The camera is hot.	Camera temperature is high and continued use may activate its protection function. It is recommended that you stop using the camera, turn it off, and wait until it cools down.
This function cannot be used.	This message will appear part way through an operation when you attempt to use a function that is not allowed in combination with another function.

Number of Snapshots/Movie Recording Time

Snapshot

Image Size (Pixels)	Approximate File Size	Built-in Memory*1 Recording Capacity	microSD Memory Card*2 Recording Capacity
14M (4320×3240)	3.40 MB	13	3199
16:9 (4320×2432)	2.23 MB	18	4355
5M (2560×1920)	1.12 MB	39	9040

Movies

Image Size / Pixels (Audio)	Approximate Data Rate (Frame Rate)	Maximum File Size	Built-in Memory*1 Recording Capacity	Maximum Recording Time with microSD Memory Card*2	File Size of 1-minute Movie
Full HD 1920×1080 (Monaural)	17 Megabits/ second (30 frames/ second)	4 GB or 29 minutes	29 seconds *4	2 hours 1 minute 19 seconds	130 MB

*1 Built-in memory capacity after formatting (Approx. 65.9MB)

*2 When using a 16GB microSDHC memory card (SanDisk Corporation). Number of image and recording time values depend on the memory card you are using.

*3 The allowable recording time will be shorter if the capacity of the microSD memory card you are using is smaller than the maximum size of one file.

*4 The data transfer rate of built-in memory is not sufficient for Full HD movies. Whenever possible use an Ultra High-Speed Type memory card.

- Depending on the data transfer rate of the memory card you are using, the time required for image storage may result in some loss of movie frames.
- Snapshot and movie recording capacity values are approximate and intended for reference only. Actual capacity depends on image contents.
- File size and data rate values are approximate and intended for reference only. Actual values depend on the type of image being shot.
- When using a memory card with a different capacity, calculate the number of images as a percentage of 16GB.

Specifications

File Format	Snapshots: JPEG (Exif Version 2.3; DCF 2.0 standard) Movies: MOV format, H.264/AVC standard, IMA-ADPCM (monaural)
Recording Media	Built-in Memory (Image Storage Area: 65.9MB*) microSD/microSDHC/microSDXC * Built-in memory capacity after formatting
Recorded Image Sizes	Snapshots: 14M (4320×3240), 16:9 (4320×2432), 5M (2560×1920) Movies: Full HD (1920×1080 30 fps)
Effective Pixels	14 Megapixels
Imaging Element	Size: 1/2.3-inch square pixel CMOS Total Pixels: 16.76 Megapixels
Lens/Focal Distance (Snapshot)	F2.8 / f = 3.8 mm (equivalent to 21 mm in 35 mm format)
Zoom	Up to 4.0X when Digital zoom is used
Focusing	Contrast Detection Auto Focus • Focus Modes: Auto Focus • AF Area: Intelligent / Multi
Approximate Focus Range (Snapshot) (From Lens Surface)	Auto Focus: 10 cm to ∞ (3.9" to ∞)
Exposure Compensation	–2.0 EV to +2.0 EV (in 1/3EV steps)

White Balance	Auto, Indoors, Outdoors
Monitor Screen (Controller)	2.0-inch TFT color LCD 230,400 dots Capacitive type touch panel
External connection terminal (Camera)	Micro USB port (Hi-Speed USB compliance, USB charging/ USB powered operation)
External connection terminal (Controller)	Micro USB port (USB charging/USB powered operation)
Microphones (Camera)	Monaural
Speaker (Camera)	Monaural
Power Requirements	Camera: Built-in rechargeable lithium ion battery Controller: Built-in rechargeable lithium ion battery
Communication function (Camera)	Bluetooth: • Version: Bluetooth ver2.1+EDR • Output class: Class 2 Wi-Fi: Standard IEEE 802.11b/g/n
Communication (Controller)	Bluetooth: • Version: Bluetooth ver2.1+EDR • Output class: Class 2

Approximate Battery Life

All of the values provided below represent the approximate amount of time under normal temperature (23°C (73°F)) before the camera turns off. These values are not guaranteed. Low temperatures shorten battery life.

Number of snapshots (Operating Time)*1	255 shots
Actual movie recording time (Full HD movie)*1	1 hour 5 minutes
Approximate continuous movie recording time (Full HD Movie)*2	1 hour 15 minutes
Continuous Playback (Snapshots)*3	4 hours 5 minutes

- Temperature: 23°C (73°F)
- Battery: NP-80 (Rated Capacity: 700 mAh)
- Recording Medium: 16GB microSDHC memory card (SanDisk Corporation UHS-I series)

*1 In accordance with CIPA (Camera and Imaging Products Association) standards
*2 In accordance with CASIO standards
*3 One-image scroll approximately every 10 seconds

- The above values are based on a full charge, the first time the battery is charged after the camera is purchased. Repeated charging shortens battery life.
- The above values are for reference only. They do not guarantee that the specified battery life will be attained under actual operating conditions.
- The amount of time the camera is left turned on, configured settings, and ambient temperature in the area where the camera is used all greatly affect recording time and number of shots values.

Power Consumption	Camera: 5 V DC, Approximately 2.8 W Controller: 5 V DC, Approximately 2.6 W
Dimensions	Camera: 60.9 (diameter) × 28.8 (D) mm (2.4" (diameter) × 1.1" (D)) (excluding hinge unit) Controller: 49.7 (W) × 84.2 (H) × 18.9 (D) mm (2.0" (W) × 3.3" (H) × 0.74" (D)) (including hinge unit) Combined: 60.9 (W) × 153.1 (H) × 34.2 (D) mm (2.4" (W) × 6.0" (H) × 1.3" (D)) (including hinge unit)
Weight	Camera: Approximately 63 g (2.2 oz) (including memory card, not including hinge unit) Controller: Approximately 80 g (2.8 oz) Combined: Approximately 175 g (6.2 oz) (including hinge unit and memory card)

■ USB-AC adaptor (AD-C53U)

Input	100 to 240 V AC, 50/60 Hz, 100 mA
Output	5.0 V DC, 650 mA
Operating Temperature Requirements	5 to 35°C (41 to 95°F)
Dimensions	53 (W) × 21 (H) × 45 (D) mm (2.1" (W) × 0.83" (H) × 1.8" (D)) (excluding projections)
Weight	Approximately 37 g (1.3 oz)

- Power cord precautions for use in Singapore
  The power cord set is not supplied. The power cord used must comply with relevant national and/or international standards.

Declaration of Conformity According to EU Directive

CE 0560

Manufacturer:
CASIO COMPUTER CO., LTD.
6-2, Hon-machi 1-chome, Shibuya-ku, Tokyo 151-8543, Japan

Responsible within the European Union:
CASIO EUROPE GmbH
Casio-Platz 1, 22848 Norderstedt, Germany

The copy of the Declaration of Conformity can be found on http://world.casio.com/ce/dc/.

To comply with the relevant European RF exposure compliance requirements, this EX-FR10, EX-FR10CT must not be co-located or operating in conjunction with other transmitter.

Note: This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation.
For more details, contact your customer service representative.

Hereby, CASIO Europe GmbH, Casio-Platz 1, 22848 Norderstedt, Germany, declares that this Digital Camera Model EX-FR10, EX-FR10CT is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

CAUTION
Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

FCC marking is a standard conformity mark in the United States.
GUIDELINES LAID DOWN BY FCC RULES FOR USE OF THIS UNIT IN THE U.S.A. (not applicable to other areas).

NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Proper connectors must be used for connection to host computer and/or peripherals in order to meet FCC emission limits.

Caution Exposure to radio frequency radiation

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules.
This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 0 mm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Declaration of Conformity

Model Number:	EX-FR10, EX-FR10CT
Trade Name:	CASIO
Responsible party:	Industrial Handheld Division Casio America, Inc.
Address:	570 Mt. Pleasant Avenue, Dover, New Jersey 07801, USA
Telephone number:	973-361-5400

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CASIO

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